

EXHIBIT A

PROXENSE, LLC,	:	
	:	
Plaintiff,	:	
	:	
v.	:	C.A. No. 6:20-cv-00879-ADA
	:	
TARGET CORPORATION,	:	
	:	
Defendant.	:	
	:	
	:	

**DECLARATION OF DR. BENJAMIN GOLDBERG WITH
REGARD TO CERTAIN CLAIM PHRASES IN U.S. PATENT NO. 10,455,533**

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I, Dr. Benjamin Goldberg, hereby declare as follows:

I. INTRODUCTION

1. My name is Dr. Benjamin Goldberg. I am an independent expert who has been engaged by Target Corporation (“Target” or “Defendant”) to provide expert opinion testimony regarding certain questions of fact related to the claims of U.S. Patent No. 10,455,533 (the “’533 Patent” or “Asserted Patent”). I am being compensated at my standard consulting rate of \$475 per hour plus reimbursement for expenses. No portion of my compensation is dependent or otherwise contingent upon the results of this matter or the specifics of my testimony.

2. I have been informed that Proxense, LLC (“Proxense” or “Plaintiff”) has brought a patent infringement lawsuit against Target in the United States District Court for the Western District of Texas. I understand that the patent asserted against Target by Proxense is the ’533 Patent, and that claims of the ’ 533 Patent that Proxense has asserted against Target are claims 1, 7-9, 11 and 17-19 (the “Asserted Claims”).

3. I have been asked by Defendant to provide my expert opinions regarding certain questions of fact relating to certain phrases appearing in asserted claims 1, 7, 11 and 17 of the ’533 Patent. In forming my opinions, I have been asked to review and comment on certain opinions contained in the declaration of Proxense’s expert Mr. Kurt Humphrey dated May 24, 2021 (“Humphrey Declaration”) and on certain statements made by Proxense in its Opening Claim Construction Brief dated May 24, 2021.

4. My opinions are set forth in this Declaration and are based on my general knowledge and experience, as well as my review of the materials that I list below in Section IV.

II. SUMMARY OF OPINIONS

5. My opinions are more fully described throughout this Declaration, but a summary of my opinions is as follows:

- A person of ordinary skill in the art (“POSITA”) at the time of the invention of the ’533 Patent would have had a Bachelor of Science degree in electrical engineering, computer science or a similar technical field together with two years of educational practicum or work experience in the field of communication networks and systems (including programming associated with the same) or related areas, as well as familiarity with the technologies (*e.g.*, client-server systems, databases, network components, user interfaces, standards, etc.) associated with wireless communication networks and systems¹.
- The following claim phrases of asserted claims 1, 7, 11 and 17 of the ’533 Patent would have multiple possible meanings to a POSITA reading the intrinsic evidence, including the claims of the ’533 Patent, the specification, and the prosecution history:
 - “a server configured to receive data from the second wireless device when in proximity to the first wireless device” (claim 1)
 - “sending data to a server, when in proximity to the first wireless device” (claim 11)
 - “the server is configured to gather information from the second wireless device” (claim 7)
 - “the server is configured to gather information from a second wireless device” (claim 17)
- Particularly in view of the disparity between the claim language and the disclosure

¹ As I identify in paragraph 17 of my Declaration below, my opinions do not change if I use Mr. Humphrey’s definition of a POSITA (*see* ¶10 of Humphrey Declaration) rather than my own.

in the specification of the '533 Patent, a POSITA would have no informed and confident choice among the multiple possible meanings for the above-identified claim phrases.

III. EXPERIENCE AND QUALIFICATIONS

6. In forming my opinions expressed in this Declaration, I have relied upon my knowledge, training, and over 35 years of academic and professional experience. While my qualifications are stated more fully in my curriculum vitae (Ex. A), here I provide a brief summary of my qualifications:

7. I am a tenured Associate Professor in the Department of Computer Science of the Courant Institute of Mathematical Sciences at New York University ("NYU") in New York. I have held this position since September 1994. From 1987 to 1994, I was an Assistant Professor in the Department of Computer Science at NYU.

8. Since September 2014, I have been the Director of Graduate Studies for the MS programs in the Department of Computer Science (although I was on sabbatical for the 2018-2019 academic year), having previously served in that role from September 2009 through August 2012. I served as the Director of Undergraduate Studies for the Department of Computer Science from September 1995 through August 1998 and from September 2003 through August 2006. In addition, I have held a one-year visiting professorship at the Institut National de Recherche en Informatique et en Automatique ("INRIA"), a national laboratory in France, and was twice appointed to a month-long position as an invited professor at the Ecole Normale Supérieure, a university in Paris.

9. I received my Doctoral degree in Computer Science from Yale University, New Haven, Connecticut, in 1988, having previously received Master of Science and Master of Philosophy degrees in Computer Science from Yale in 1984. My undergraduate degree from

Williams College in 1982 was a Bachelor of Arts degree with highest honors in Mathematical Sciences.

10. I have taught courses and lectured at the undergraduate and graduate level in programming languages, program design, object-oriented programming, database languages, web services, user interfaces, embedded systems (*e.g.*, mobile devices), networking and other areas related to the technology at issue in this matter. Furthermore, I have spent thousands of hours over the past 20 years analyzing wireless communication devices (especially the source code running in those devices) in the context of wireless standards such as the 802.11 (WiFi) standards, 3G and LTE cellular standards, and others. Additional information concerning the computer science courses that I have taught and my professional publications and presentations in the field of computer science is set forth in my current Curriculum Vitae, a copy of which is attached as Appendix A.

IV. MATERIALS REVIEWED

11. In preparing this declaration, I considered the following materials:

- The '533 Patent;
- Prosecution history of the '533 Patent;
- U.S. Provisional Patent Application No. 60/760,362, filed January 6, 2006, and to which the '533 Patent claims priority ('533 Patent at p. 2);
- Proxense's Opening Claim Construction Brief (dated May 24, 2021);
- the Declaration of Mr. Kurt Humphrey (dated May 24, 2021) that Proxense submitted with its Opening Claim Construction Brief;
- Proxense's Preliminary Infringement Contentions for the Asserted Claims of the '533 Patent (dated January 25, 2021); and

- “Proxense System Architecture” document, dated January 3, 2006, and Bates-labeled PROX007802-PROX007979 (identified on p. 2 of Proxense’s Preliminary Infringement Contentions for the Asserted Claims of the ’533 Patent (dated January 25, 2021)).

V. PRIORITY DATE OF THE ASSERTED PATENT

12. The ’533 Patent was filed on March 27, 2019. I understand that, through a series of continuation patent applications, the ’533 Patent claims priority to, and incorporates by reference in its entirety, U.S. Provisional Patent Application 60/760,362, which was filed on January 6, 2006 (the “’362 Provisional”). ’533 Patent at p. 2, 1:18-22, 1:34-38, and 1:46-50. I understand that the series of continuation patent applications to which the ’533 Patent also claims priority, and incorporates by reference in their entirety, includes three (3) U.S. patents that were filed by Proxense on January 5, 2007²: U.S. Patent Nos. 8,340,672, 8,219,129, and 9,113,464. I also understand that the series of continuation patent applications to which the ’533 Patent also claims priority, and incorporates by reference in their entirety, includes U.S. Patent Nos. 8,457,672 (filed on June 7, 2012), 9,037,140 (filed on November 27, 2012), and 10,334,541 (filed on March 31, 2015). I have been informed and understand that, as continuation patent applications, each of these patents share a common specification (including figures and disclosure) with the ’533 Patent.

13. I have been informed and understand that, in its Preliminary Infringement Contentions, Proxense states “that all asserted claims of the ’533 Patent are entitled to a priority date of at latest December 9, 2005”, and also states that “[d]ocuments evidencing conception and

² I have been informed and understand that Proxense filed another patent application on this same date (January 5, 2007) that also claims priority to, and incorporates by reference in its entirety, the ’362 Provisional, which is U.S. Patent No. 8,036,152. I have also been informed and understand that the ’533 Patent does not claim priority to U.S. Patent No. 8,036,152. *See also* ’533 Patent at pp. 1-2, 1:8-50.

reduction to practice for each claimed invention are being concurrently produced bearing Bates numbers PROX007802-PROX007979³.” *See* Proxense’s Preliminary Infringement Contentions at p. 2. Thus, in forming my opinions, I considered the level of knowledge, skill and common terminology used by persons of ordinary skill in the art as of Proxense’s contended time of the invention (December 9, 2005). My opinions contained in this Declaration do not change regardless of whether the invention date of the Asserted Claims of the ’533 Patent is January 6, 2006 (the filing date of the ’562 Provisional (*see* paragraph 12 above)) or January 5, 2007 (the filing date of the earliest non-provisional patent applications to which the ’533 Patent claims priority (*see* paragraph 12 above)).

VI. PERSON OF ORDINARY SKILL IN THE ART

14. I have been instructed by Defendant’s counsel that terms in a patent’s claims must be read as they would have been understood by a person of ordinary skill in the art (“POSITA”) at the time of the invention (*see* paragraph 13 above).

15. I have also been instructed by Defendant’s counsel that a POSITA is a hypothetical person to whom the claimed subject matter pertains with the capability of understanding the scientific and engineering principles applicable to the pertinent art. I have further been instructed by Defendant’s counsel that the following factors may be considered in determining the level of ordinary skill: type of problems encountered in the art; prior art solutions to those problems; speed with which innovations are made; sophistication of the technology; and educational level of active workers in the field. I have been instructed by Defendant’s counsel that not every factor may be present and that one or more factors may predominate.

³ I have been informed and understand that Proxense produced the document titled “Proxense System Architecture”, dated January 3, 2006, with its pages Bates-labeled as PROX007802-PROX007979, with its Preliminary Infringement Contentions on January 25, 2021. *See also* paragraph 11 above.

16. In my opinion, a POSITA at the time of the invention of the '533 Patent would have had a Bachelor of Science degree in electrical engineering, computer science or a similar technical field together with two years of educational practicum or work experience in the field of communication networks and systems (including programming associated with the same), or related areas. A POSITA at the time of the invention of the '533 Patent would also be familiar with the technologies (*e.g.*, client-server systems, databases, network components, user interfaces, standards, etc.) associated with wireless communication networks and systems, including those involving mobile devices. Under this definition, I am at least a POSITA both now and as of December 2005. I have applied this definition of a POSITA as of December 2005 in rendering my opinions. *See* also paragraph 13 above.

17. I note that Proxense's expert's (Mr. Kurt Humphrey) stated definition of a POSITA at the time of the invention of the '533 Patent—"at least a bachelor's degree in engineering, physics, or computer science, and at least 2 year[sic] of experience in the design of wireless telecommunications systems or analyses of wireless telecommunications components and familiarity with wireless telecommunications standards"—differs slightly from my own opinion as to the definition of such a POSITA. *See* Humphrey Declaration at ¶10. My opinions contained in this Declaration do not change regardless of whether I apply my definition, or Mr. Humphrey's definition, of a POSITA. And, under Mr. Humphrey's definition, I am also at least a POSITA both now and as of December 2005.

VII. SPECIFIC QUESTIONS OF FACT ON WHICH I HAVE BEEN ASKED TO PROVIDE MY OPINIONS

A. Legal Standards - Claim Construction and Definiteness Requirement

18. I am not an attorney and have not been asked to offer my opinion on the law. However, the laws of claim construction have been explained to me by Defendant's counsel, and

my understanding is as follows.

19. I have been instructed that the claims of a patent define the limits of the patentees' exclusive rights. In order to determine the scope of the claimed invention, courts typically construe (or define) claim terms, the meaning of which the parties may dispute. I have been instructed that claim terms should generally be given their ordinary and customary meaning as understood by a POSITA at the time of the invention and after reading the claims, the patent's specification, and the patent's prosecution history.

20. I have been instructed that patent claims must be construed in light of and consistent with the patent's "intrinsic evidence." I have been instructed that "intrinsic evidence" includes the claims themselves, the written disclosure in the specification, the patent's prosecution history, including the prior art that was considered by the United States Patent and Trademark Office ("USPTO"), and the claims and prosecution history of related patents including patents that share the same specification as the patent-at-issue. I have been instructed that "extrinsic evidence" may also be considered when construing claims and that such "extrinsic evidence" may include, for example, technical dictionaries, treatises, and expert testimony.

21. I have been instructed that a patent claim, when read in view of the specification and the prosecution history, is required to inform a POSITA about the scope of the invention with reasonable certainty. I have been instructed that this requirement of a patent claim is called "definiteness". I have also been instructed that a patent claim does **not** satisfy the "definiteness" requirement merely because a POSITA can ascribe **some** meaning to the claim. Rather, the claim, when read in view of the specification and the prosecution history, must provide objective boundaries for the invention to a POSITA to thereby apprise the public of what is still open to them. I have further been instructed that, therefore, important inquiries related to the

“definiteness” requirement include whether a claim limitation, in view of the claims, specification, and prosecution history, might mean several different things to a POSITA, and, if so, whether an informed and confident choice is available to the POSITA among the contending meanings.

B. Asserted Claims 1, 7, 11 and 17

22. I have been informed and understand that the parties dispute the meaning of several claim terms in the Asserted Claims of the '533 Patent. I have not been asked by Defendant to provide my opinions related to the claim terms underlying each of the parties' disputes. Rather, I have been asked by Defendant to provide my opinions regarding certain questions of fact relating to certain phrases appearing in asserted claims 1, 7, 11 and 17 of the '533 Patent. Immediately below, I have reproduced the entirety of asserted claims 1, 7, 11 and 17 of the '533 Patent, and I have annotated in italics the specific claim phrases in these four (4) asserted claims on which I have been asked by Defendant to provide my opinions:

Claim 1. A system comprising:

a first wireless device having a known physical location, the first wireless device including;

a first wireless transceiver configured to transmit a beacon including a source identifier, the source identifier indicating a source of the beacon;

a second wireless device including:

a second wireless transceiver having an active mode in which power is consumed, and a sleep mode in which power is conserved;

a timer operatively coupled to the second wireless transceiver used to indicate when to switch from sleep mode to active mode based on time slot information;

processing circuitry operatively coupled to the second wireless transceiver and the timer, the processing circuitry arranged to switch the second wireless transceiver from the sleep mode to the active mode in response to input from the timer, the

processing circuitry also arranged to monitor a first channel for the beacon during the active mode and, subsequently, to increase a channel number to a second channel and to reset the timer; and

a server configured to receive data from the second wireless device when in proximity to the first wireless device.

Claim 7. The system of claim 1, further *the server is configured to gather information from the second wireless device.*

Claim 11. A method comprising:

switching a wireless transceiver from a sleep mode in which power is conserved to an active mode in which power is consumed responsive to an expiration of a timer, the timer indicating when to switch from sleep mode to active mode based on time slot information,

monitoring a first channel for a beacon during the active mode, wherein the beacon includes a source identifier, the source identifier indicating a source of the beacon, the source of the beacon having a known physical location;

increasing a channel number to a second channel;

subsequent to increasing the channel number to the second channel, resetting the timer;

receiving, from a first wireless device, the beacon including the source identifier, the source identifier indicating the source of the beacon; and

sending data to a server, when in proximity to the first wireless device.

Claim 17. The method of claim 11, wherein *the server is configured to gather information from a second wireless device*, the second wireless device including the wireless transceiver.

C. Detailed Analysis of the Specific Questions of Fact on Which I Have Been Asked to Provide My Opinions

1. Summary of the Specific Questions of Fact on Which I Have Been Asked to Provide My Opinions

23. As I identified in paragraph 21 above, I have not been asked by Defendant to provide my opinions regarding the claim terms underlying each of the parties' disputes related to the six (6) Asserted claims of the '533 Patent.

24. Rather, I have been asked by Defendant to consider, whether each of the above-italicized claim limitations (*see* paragraph 22 above), in view of the claims, specification and prosecution history, would have had multiple possible meanings to a POSITA. If, in my opinion, the claim limitation would have had multiple possible meanings to a POSITA, then I have been asked by Defendant to consider whether an informed and confident choice is available to a POSITA among the contending meanings.

25. Additionally, in forming my opinions, I have been asked to review and comment on certain opinions contained in the declaration of Proxense's expert Mr. Kurt Humphrey dated May 24, 2021 ("Humphrey Declaration") and on certain statements made by Proxense in its Opening Claim Construction Brief dated May 24, 2021.

2. General Observations on the Language of Claims 1, 7, 11 and 17

26. As I annotated with italics in paragraph 22 above, the claim phrases for which Defendant has asked me to consider the aforementioned questions of fact (*see* paragraph 24 above) are:

- Independent claim 1: "*a server configured to receive data from the second wireless device when in proximity to the first wireless device*"
- Dependent claim 7 (dependent on claim 1): "*the server is configured to gather information from the second wireless device*"
- Independent claim 11: "*sending data to a server, when in proximity to the first wireless device*"

- Dependent claim 17 (dependent on claim 11): “the server is configured to gather information from a second wireless device”

27. In viewing the language of the claims as a whole, I note that independent claim 1, dependent claim 7 and dependent claim 17⁴ recite three different components, in relevant part: (1) a “first wireless device” that has a “known physical location” and that is configured to transmit a “beacon”⁵, (2) a “second wireless device”, including a “wireless transceiver”, that, when its wireless transceiver is in “active mode”, is configured to monitor a “channel” for a beacon transmitted by a “source of the beacon” (e.g., “first wireless device”)⁶, and (3) a “server” that is configured to receive “data”/“gather information” “from the second wireless device.”⁷ In contrast, independent claim 11 does *not* recite (1) a “second wireless device”, *nor* (2) a source of the “data” sent to the “server” (e.g., device that performs the “sending” step, device that originates the “data” and forwards it to the device that performs the “sending” step, etc.).⁸

28. Moreover, none of the claims expressly identify *what* (e.g., which device (claimed or unclaimed)) is “in proximity to the first wireless device” to trigger the server’s receipt of “data from the second wireless device” (claim 1) or the sending of “data” to the server (claim 11).

29. Regarding the respective phrases-at-issue in claims 7 and 17, and the first half of the respective phrases-at-issue in claims 1 and 11, in its Opening Claim Construction Brief (p. 14), Proxense states that “[t]he claim language is silent on the specific path by which the server receives data.” I generally agree with this statement with the clarification that the language of claim 1 is

⁴ I have been instructed that, as a dependent claim of claim 11, dependent claim 17 includes all of the limitations of claim 11 as well as the additional limitations recited in claim 17.

⁵ ‘533 Patent at claim 1 (41:44-46), claim 17 (dependent on claim 11 (42:36-37, 42:41-43)).

⁶ ‘533 Patent at claim 1 (41:47-48, 41:54-55, 41:58-60), claim 17 (43:2-4) (dependent on claim 11 (42:28-29, 42:34-35)).

⁷ ‘533 Patent at claim 1 (41:63-65), claim 17 (dependent on claim 11 (42:44-45)).

⁸ ‘533 Patent at claim 11 (42:44-45).

silent on the specific path by which the server “receive[s] data from the second wireless device”, claims 7 and 17 are silent on the specific path by which the server “gather[s] information from [the/a] second wireless device”, and claim 11 is silent on both (i) the source of the “data”, and (ii) the specific path by which this unnamed source “send[s] data to [the] server”. Similarly, in its Opening Claim Construction Brief (p. 10), Proxense also states that “even the last ‘server’ limitations of claims 1 and 11 do not require the second wireless device to communicate through the first wireless device.” Again, based on the plain language of claims 1 and 11 (and the language of the dependent claims of the ’533 Patent), I generally agree with this statement.

30. Regarding the second half of the respective phrases-at-issue in claims 1 and 11 (“when in proximity to the first wireless device”), Mr. Humphrey states that “the only reasonable understanding of this portion of claim 1 is that the server’s data reception is conditioned on the second wireless device being in proximity to the first wireless device, not the server being in proximity to the first wireless device”, and that he understands the phrase in claim 11 “to refer to sending data to a server, when the entity performing the method of claim 11 is in proximity to the first wireless device”:

Claim 1 recites “a server configured to receive data from the second wireless device when in proximity to the first wireless device.” A POSITA would understand this to mean that a server configured to receive data from the second wireless device ***when the second wireless device is in proximity to the first wireless device***. Servers are not mobile devices, able to be easily moved into and out of proximity to any other devices. Furthermore, in my experience, a server’s purpose is to offer remote services, and thus does not typically have any ability to detect whether any other devices are in physical proximity. In my experience, servers do not typically offer any services that are based on whether another device is in physical proximity. Accordingly, ***the only reasonable understanding of this portion of claim 1 is that the server’s data reception is conditioned on the second wireless device being in proximity to the first wireless device***, not the server being in proximity to the first wireless device⁹. ***I note again here that a POSITA would read the specification of the ’533 patent as encompassing direct***

⁹ See my discussion of dependent claims 4 and 14 in paragraphs 33 and 41 below.

communication between PDKs and servers.

As of the filing date of the '533 patent, cellular telephones had clearly established the capability to communicate wirelessly with servers. At that time, it was also well known that communication between cellular telephones and servers could be, and was often, conducted at least partially through TCP/IP networks, such as the public Internet, which were well known to employ many different network devices such as routers, base stations, and the like. Thus, *as of the filing date of the '533 patent, no POSITA would have expected a cellular telephone, such as a PDK, to communicate with a server without adequate network infrastructure, for example using infrastructure such as RDCs to reach a server.*

For these same reasons, *I also understand* the term “sending data to a server, when in proximity to the first wireless device” of claim 11 of the '533 Patent *to refer to sending data to a server, when the entity performing the method of claim 11 is in proximity to the first wireless device.*

Humphrey Declaration at ¶¶25-27 (emphasis added).

31. As an initial matter, I note that Mr. Humphrey's stated “understand[ing]” of the phrase “sending data to a server, when in proximity to the first wireless device” in claim 11—“sending data to a server, when *the entity performing the method of claim 11* is in proximity to the first wireless device”—appears to be different than Proxense's asserted meaning of this same phrase in the same claim (“sending data to a server, when *the wireless transceiver* is in proximity to the first wireless device”). Humphrey Declaration at ¶27; Proxense's Opening Claim Construction Brief at pp. 13-14.

32. Moreover, to the extent that Proxense's and/or Mr. Humphrey's position is that a POSITA would understand the language of claim 11 *itself* to expressly require that the claimed “wireless transceiver” (or that a device including the claimed “wireless transceiver”) *must* perform *all* of the steps of claim 11 (including the “sending” step), I disagree.

33. For example, as I identify in paragraph 27 of my Declaration above, claim 11 of the '533 Patent does *not* expressly recite a source of the “data” sent to the “server” (e.g., device that performs the “sending” step, device that originates the “data” and forwards it to the device

that performs the “sending” step, etc.). Additionally, for example, dependent claim 16 of the ’533 Patent recites, in relevant part, “wherein ... the first wireless device ... includes a wireless data transmission that completes a purchase transaction” which, based purely on the plain language of claim 16 (including all of the limitations of independent claim 11), does not expressly require the claimed “wireless transceiver” to be involved in any communications associated with such “purchase transaction.” I also note that, although independent claim 11 of the ’533 Patent recites that the “first wireless device” has a “known physical location”, a POSITA reading dependent claim 14 of the ’533 Patent would understand that this “known physical location” in claim 11 is **not** required to be “fixed.”¹⁰¹¹ In other words, based purely on the plain language of dependent claim 14 (including all of the limitations of independent claim 11), the “physical location” of the “first wireless device” could change (as could its “proximity” to other devices (claimed and unclaimed)) as long as the “physical location” of such “first wireless device” was “known”.

34. Thus, absent the disclosure in the specification, or a statement by Proxense in the prosecution history, requiring a narrower interpretation, in my opinion, a POSITA reading the language of claim 11, and the language of the claims dependent on claim 11 (*i.e.*, claims 12-20), would **not** understand that such claim language expressly requires that the claimed “wireless transceiver” (or that a device including the claimed “wireless transceiver”) **must** perform the

¹⁰ See ’533 Patent at claim 14 (“The method of claim 11, wherein the known physical location of the first wireless device is a fixed physical location”).

¹¹ I also note that, likewise, although independent claim 1 of the ’533 Patent recites that the “first wireless device” has a “known physical location”, a POSITA reading dependent claim 4 of the ’533 Patent would understand that this “known physical location” in claim 1 is similarly **not** required to be “fixed.” See ’533 Patent at claim 4 (“The system of claim 1, wherein the known physical location of the first wireless device is a fixed physical location”). Accordingly, and just as with the plain language of claim 14, based purely on the plain language of dependent claim 4 (including all of the limitations of independent claim 1), the “physical location” of the “first wireless device” could change (as could its “proximity” to other devices (claimed and unclaimed)) as long as the “physical location” of such “first wireless device” was “known”. See *also* paragraph 41 of my Declaration below.

“sending data to a server” step of claim 11. Similarly, in my opinion, a POSITA would **not** understand that such claim language **itself** expressly requires that the claimed “wireless transceiver” of claim 11 (or a device including the claimed “wireless transceiver”) be **what** triggers the claimed “sending data to a server” of claim 11 (*i.e.*, be **the** entity that is “in proximity to the first wireless device”).

3. *Proxense and Mr. Humphrey’s Stated Interpretation of the Disclosure in the ’533 Patent Specification*

35. In his declaration, Mr. Humphrey (and similarly Proxense in its opening claim construction brief) points to several excerpts of the specification as being relevant to the meaning of the phrases in claims 1, 7, 11 and 17 that I identified with italics in paragraphs 22 and 26 of my Declaration above. *See* Humphrey Declaration at ¶¶21-22, 24-28; Proxense Opening Claim Construction Brief at pp. 5, 11-12, 15-16.

36. For example, regarding the “path” issue in these claim phrases (*see* paragraph 29 of my Declaration above), Mr. Humphrey and Proxense make several statements regarding the disclosure in the specification of the ’533 Patent. Specifically, Mr. Humphrey states that the specification of the ’533 Patent discloses both: (1) embodiments involving an **indirect** path in which a “first wireless device” (which he states is akin to the disclosed “Reader Decoder Circuit” or “RDC”¹²) forwards “data” between a “server” and a “second wireless device” (which he states is akin to the disclosed “Personal Digital Key” or “PDK”¹³), and (2) embodiments involving a **direct** path between a “server” and a “second wireless device” (“PDK”) (*i.e.*, with no intermediary “RDC”). Humphrey Declaration at ¶¶14, 21-22. I have reproduced his statements below, and

¹² Humphrey Declaration at ¶¶21-22, 24, 26; *see also* Proxense Opening Claim Construction Brief at pp. 2, 16.

¹³ Humphrey Declaration at ¶¶21-22, 24, 26; *see also* Proxense Opening Claim Construction Brief at pp. 2, 16.

emphasized (with bold italics) statements in which he asserts that the specification discloses embodiments involving a *direct* path between a “server” and a “PDK” (*i.e.*, with no intermediary “RDC”):

[T]he ’533 Patent uses one or more reader decoder circuits (“RDCs”) placed throughout a space to interact with one or more personal digital keys (“PDKs”), e.g., mobile wireless telecommunications devices such as smartphones, and a server to provide information and/or services. ***RDCs can communicate with PDKs to track their location as they move through the space, provide services to the PDKs such as via a back-end server, or direct PDKs to access those services themselves.***¹⁴

Humphrey Declaration at ¶14 (emphasis added);

The ’533 Patent thus describes embodiments in which bi-directional communication takes place between PDKs and RDCs, with PDKs and RDCs taking turns sending information to each other during superframes. [E.g., the ’533 Patent at FIGS. 14, 17; Col. 15:22-27.] The ’533 Patent also describes other communication configurations in addition to bidirectional communication between a PDK and its beacon sending RDC. For example, ***the ’533 Patent describes communication between PDKs and servers. Here, RDCs transmit beacons to PDKs, which can prompt the PDKs to contact a server directly.*** For example, ***the ’533 Patent describes an embodiment in which RDCs enable PDK access to a system through a back-end central server.*** The ’533 Patent at ***Col. 15:17-21.*** Additionally, ***the ’533 Patent describes an embodiment in which RDCs act as gateways, controlling access to a service offered by, e.g., a server. A POSITA would understand that, after access is granted, servers may provide services to PDKs directly.*** The ’533 Patent at ***Col. 10:21-38.*** Accordingly, a POSITA would not read the specification of the ’533 Patent to limit a PDK to communicating only with its beacon sending RDC. Rather, ***a POSITA would read the specification of the ’533 patent as encompassing direct communication between PDKs and servers.***

Humphrey Declaration at ¶¶21-22 (emphasis added).

37. In its Opening Claim Construction brief (pp. 5, 11-12, 15-16), Proxense relies on these statements from Mr. Humphrey and also alleges that, in addition to the citations specifically relied on by Mr. Humphrey (15:17-21, 10:21-38), the specification at 6:28-7:37, 9:14-10:14,

¹⁴ I note that Mr. Humphrey does not cite to any support in the specification of the ’533 Patent for any of his statements in the Humphrey Declaration at ¶14.

30:29-51 and 37:16-57 disclose embodiments involving direct communications, without an intermediary RDC, between a server and a PDK. *See* Proxense Opening Claim Construction brief at p. 5 (“The user’s PDK may be ... a cellular phone ... The exemplary PDK is contemplated as a multi-functional device, capable of robust communication”), pp. 11-12 (“[T]he specification describes a sophisticated PDK in an environment that allows the PDK to communicate directly with the claimed server.”), pp. 15-16 (“[T]he ’533 Patent’s specification provides various examples of the second wireless devices in communication with a server ... [T]he ’533 Patent explicitly discloses that the PDK could be a cell phone communicating over multiple communication protocols in a time when cell phones readily communicated with servers through various network infrastructure.”) (internal citations omitted).

38. As I explain in detail below (paragraphs 51-67), I disagree with Mr. Humphrey and Proxense that a POSITA reading the specification would understand it to disclose *direct* communications, without an intermediary RDC, between a server and a PDK, including at the citations specifically relied on by Mr. Humphrey and Proxense.

4. *The “Server” Claim Phrases-at-Issue Would Have Multiple Meanings to a POSITA Reading the Claims in View of the Specification*

39. Setting aside the issue of whether the specification discloses direct communications between PDKs and servers (which, in my opinion, it does not), given the language of the claims and the clear, undisputed description in the specification that RDCs forward communications from PDKs to servers (and to PDKs from servers), it is my opinion that at least the following meanings would be possible meanings to a POSITA for each of these claim phrases (to which I have added the underlined text to the original claim language to illustrate the possible meaning):

1. (claims 1, 7, 11, 17) The RDC forwards data from the PDK to the server when the PDK is in proximity to the RDC.¹⁵
 - Independent claim 1: “a server configured to receive data indirectly from the second wireless device, and directly from the first wireless device, when the second wireless device is in proximity to the first wireless device”
 - Dependent claim 7 (dependent on claim 1): “the server is configured to gather information indirectly from the second wireless device and directly from the first wireless device”
 - Independent claim 11: “the first wireless device sending data, received by the first wireless device from the wireless transceiver, directly to a server, when the wireless transceiver is in proximity to the first wireless device”
 - Dependent claim 17 (dependent on claim 11): “the server is configured to gather information indirectly from a second wireless device and directly from the first wireless device”
2. (claims 1, 7, 11, 17) The PDK sends data/information about itself directly to the server when the PDK is in proximity to the RDC.¹⁶
 - Independent claim 1: “a server configured to receive data directly from the second wireless device when the second wireless device is in proximity to the first wireless device”
 - Dependent claim 7 (dependent on claim 1): “the server is configured to gather information directly from the second wireless device”
 - Independent claim 11: “the wireless transceiver sending data directly to a server, when the wireless transceiver is in proximity to the first wireless device”
 - Dependent claim 17 (dependent on claim 11): “the server is configured to gather information directly from a second wireless device”

¹⁵ In my opinion, this interpretation is plausible to a POSITA from the claim language, especially because, as I discuss in detail below (see paragraphs 51-67), it is consistent with the actual disclosure of the '533 Patent.

¹⁶ In my opinion, this interpretation is plausible to a POSITA from the claim language; *however*, as I discuss in detail below (see paragraphs 51-67), in my opinion, the specification does *not* disclose embodiments in which a PDK sends data/information about itself directly to a server (*i.e.*, without an intermediary RDC) when the PDK is in proximity to an RDC.

3. (claims 1, 7, 11, 17) The PDK forwards data from the RDC to a server when the PDK is in proximity to the RDC.¹⁷
- Independent claim 1: “a server configured to receive data directly from the second wireless device, and indirectly from the first wireless device, when the second wireless device is in proximity to the first wireless device”
 - Dependent claim 7 (dependent on claim 1): “the server is configured to gather information directly from the second wireless device, and indirectly from the first wireless device”
 - Independent claim 11: “the wireless transceiver sending data, received from the first wireless device, to a server, when the wireless transceiver is in proximity to the first wireless device”
 - Dependent claim 17 (dependent on claim 11): “the server is configured to gather information, received by the wireless transceiver from the first wireless device, from a second wireless device”
4. (claims 1, 7, 11, 17) The PDK forwards data, received by the PDK from an unclaimed component (e.g., application, asset, service – see, e.g., dependent claims 5, 17), directly to a server (i.e., not via the RDC) when the PDK is in proximity to the RDC.¹⁸
- Independent claim 1: “a server configured to receive data directly from the second wireless device, and indirectly from [an unclaimed component (e.g., application, asset, service)], when the second wireless device is in proximity to the first wireless device”
 - Dependent claim 7 (dependent on claim 1): “the server is configured to gather information directly from the second wireless device, and indirectly from [an unclaimed component (e.g., application, asset, service)]”
 - Independent claim 11: “the wireless transceiver sending data, received from [an unclaimed component (e.g., application, asset, service)], to a server, when the wireless transceiver is in proximity to the first wireless device”
 - Dependent claim 17 (dependent on claim 11): “the server is configured to gather information, received by the wireless transceiver from [an unclaimed component

¹⁷ In my opinion, this interpretation is plausible to a POSITA from the claim language; *however*, as I discuss in detail below (see paragraphs 51-67), in my opinion, the specification does *not* disclose embodiments in which a PDK forwards data from an RDC to a server when the PDK is in proximity to the RDC.

¹⁸ In my opinion, this interpretation is plausible to a POSITA from the claim language; *however*, as I discuss in detail below (see paragraphs 51-67), in my opinion, the specification does *not* disclose embodiments in which a PDK forwards data from an unclaimed component (e.g., application, asset, service) directly to a server (i.e., not via the RDC) when the PDK is in proximity to the RDC.

(e.g., application, asset, service)] from a second wireless device”

5. (claims 1, 7, 11, 17) The RDC forwards data/information (e.g., “PDK ID & SQ”), that it receives from a PDK, to an unclaimed component (e.g., electronic game) and, subsequently, that unclaimed component (e.g., electronic game) forwards that received data/information to a server.¹⁹

- Independent claim 1: “*a server configured to receive data indirectly from the second wireless device and the first wireless device, and directly from [an unclaimed component (e.g., electronic game)], when the second wireless device is in proximity to the first wireless device, wherein said data was previously sent to the first wireless device by the second wireless device and then forwarded from the first wireless device to [the unclaimed component (e.g., electronic game)]*”
- Dependent claim 7 (dependent on claim 1): “*the server is configured to gather information indirectly from the second wireless device and the first wireless device, and directly from [an unclaimed component (e.g., electronic game)], wherein said information was previously sent to the first wireless device by the second wireless device and then forwarded from the first wireless device to [the unclaimed component (e.g., electronic game)]*”
- Independent claim 11: “*[an unclaimed component (e.g., electronic game)] sending data, received indirectly from the wireless transceiver via the first wireless device, to a server, when the wireless transceiver is in proximity to the first wireless device*”
- Dependent claim 17 (dependent on claim 11): “*the server is configured to gather information indirectly from a second wireless device” and the first wireless device, and directly from [an unclaimed component (e.g., electronic game)], wherein said information was previously sent to the first wireless device by the second wireless device and then forwarded from the first wireless device to [the unclaimed component (e.g., electronic game)]*”

40. It appears that neither Mr. Humphrey nor Proxense would dispute my opinion that these above-listed five (5) possible meanings represent multiple, possible meanings of the phrases-at-issue in claims 1, 7, 11 and 17 to a POSITA. See, e.g., Proxense’s Opening Claim Construction Brief at p. 14 (“The claim language is silent on the specific path by which the server receives data.”), pp. 10-11 (“[E]ven the last “server” limitations of claim 1 and 11 do not require the second

¹⁹ In my opinion, this interpretation is plausible to a POSITA from the claim language, especially because, as I discuss in detail below (see paragraphs 54-55, 66), it is consistent with the actual disclosure of the ’533 Patent. See, e.g., ’533 Patent at Figure 42 (“Electronic game” “send[ing] RDC Detected PDK ID and SQ” to “Central server”).

wireless device to communicate through the first wireless device ... An intermediate step of sending the data back to the server through the first wireless device may be permissible, but it is not necessary.”); *see also, e.g.*, Humphrey Declaration at ¶¶14, 21-22.

41. Additionally, as I discussed above in paragraph 33, although independent claims 1 and 11 of the ’533 Patent each recite that the “first wireless device” has a “known physical location”, a POSITA reading dependent claims 4 and 14 of the ’533 Patent would understand that this “known physical location” in claims 1 and 11 is *not* required to be “fixed.” *See* my discussion on paragraph 33 above. In other words, based purely on the plain language of dependent claim 4 (including all of the limitations of independent claim 1) and/or based purely on the plain language of dependent claim 14 (including all of the limitations of independent claim 11), the “physical location” of the “first wireless device” could change (as could its “proximity” to other devices (claimed and unclaimed)) as long as the “physical location” of such “first wireless device” was “known”. As a result, and for the exemplary reasons that I discuss immediately above, and in paragraphs 33 and 34 of my Declaration above, in my opinion, and in view of the plain language of claims 1 and 11, and of dependent claims 4 and 14, a POSITA would understand that the “server” limitations in claims 1 and 11 could also possibly mean (*i.e.*, in addition to the five (5) possible meanings that I identify in paragraph 39 above), for example:

6. (independent claims 1 and 11): An RDC with a known, but changing, physical location sends data (*e.g.*, data that the RDC had previously received from a PDK) to a server when its communication range capability permits the RDC to do so.²⁰

- Independent claim 1: “a server configured to receive data indirectly from the second wireless device, and directly from the first wireless device, when the

²⁰ As I discuss in paragraph 33 above (and paragraph 41), in my opinion, this interpretation is possible to a POSITA based on the plain language *itself* of dependent claim 4 (including all of the limitations of independent claim 1), and the plain language *itself* of dependent claim 14 (including all of the limitations of independent claim 11), as a POSITA reading dependent claims 4 and 14 would understand that the “known physical location” in independent claims 1 and 11 is *not* required to be “fixed.”

server is in proximity to the first wireless device

- Independent claim 11: “the first wireless device sending data [e.g., “purchase transaction” data from an unclaimed component, data previously received from the “wireless transceiver”, etc.] to a server, when the server is in proximity to the first wireless device”.

42. Furthermore, specifically regarding the phrase “sending data to a server, when in proximity to the first wireless device” in claim 11, as I discuss above (*see* paragraphs 27 and 30-34 of my Declaration), it is also my opinion that, absent the disclosure in the specification or a statement by Proxense in the prosecution history requiring a narrower interpretation, a POSITA would **not** understand that the claim language **itself** expressly requires that the claimed “wireless transceiver” (or that a device including the claimed “wireless transceiver”) **must** perform this “sending” step of claim 11²¹. Similarly, as I discuss above (*see* paragraphs 27 and 30-34 of my Declaration), it is also my opinion that a POSITA would **not** understand that such claim language **itself** expressly requires that the claimed “wireless transceiver” of claim 11 (or a device including the claimed “wireless transceiver”) be **what** triggers the claimed “sending” step of claim 11 (*i.e.*, be **the** entity that is “in proximity to the first wireless device”).²²

43. As a result, and for the exemplary reasons that I discuss in paragraphs 33 and 34 of my Declaration above, in my opinion, and in view of the plain language of claim 11 and of the claims dependent on claim 11 (*i.e.*, claims 12-20), a POSITA would understand that the “sending” step in claim 11 could also possibly mean (*i.e.*, in addition to the five (5) possible meanings that I identify in paragraph 39 above and the 6th possible meaning that I identify in paragraph 41 above),

²¹ Possible meanings 2-4 that I identified above (*see* paragraph 39) involve the claimed “wireless transceiver” (or a device including the claimed “wireless transceiver”) performing the “sending” step of claim 11.

²² Possible meanings 2-4 that I identified above (*see* paragraph 39) involve the claimed “wireless transceiver” (or a device including the claimed “wireless transceiver”) being what triggers the “sending” step of claim 11.

for example:

7. (independent claim 11 only): An unclaimed entity interacts with an unclaimed component (e.g., a player sees an electronic game and presses a button on it) in proximity to an RDC (e.g., electronic game is installed in the same housing as the RDC)²³ which triggers that unclaimed component to send corresponding data (e.g., player status data) to a server²⁴.
 - Independent claim 11 only: “[an unclaimed component (e.g., electronic game installed in the same housing as a first wireless device, etc.)] sending data to a server, when a player is in proximity to the first wireless device”;
8. (independent claim 11 only): Either an RDC, or an unclaimed component (e.g., component involved in a “purchase transaction” with an RDC) within wireless communication range of an RDC, sends corresponding data (e.g., data regarding the purchase transaction) to a server.²⁵
 - Independent claim 11 only:
 - i. “the first wireless device sending data to a server, when [an unclaimed component (e.g., component involved in a “purchase transaction” with the “first wireless device” etc.)] is in proximity to the first wireless device”;
 - ii. “[an unclaimed component (e.g., component involved in a “purchase transaction” with the “first wireless device” etc.)] sending data to a server, when [the unclaimed component] is in proximity to the first wireless device”;

²³ See, e.g., '533 Patent at Figures 33, 38, 39 (“Electronic game” “send[ing] status that player has responded via the game interface” to “Central server”) and corresponding disclosure including at 38:48-39:6, 39:15-26; Figures 41, 42 and corresponding disclosure including at 40:6-18, 40:32-39.

²⁴ In my opinion, this interpretation is plausible to a POSITA from the claim language, especially because, as I discuss in detail below (see paragraphs 54-55, 66), it is consistent with the actual disclosure of the specification of the '533 Patent. See citations in footnotes 19 and 23 above.

²⁵ As I discuss in paragraph 33 above, in my opinion, this interpretation is possible to a POSITA based on the plain language *itself* of dependent claim 16 (including all of the limitations of independent claim 11).

5. *Particularly in View of the Disparity Between the Claim Language and the Actual Disclosure in the '533 Patent Specification, a POSITA Would Have No Informed or Confident Choice Among the Contending Meanings*

44. It is also my opinion that, particularly in view of the disparity between the claim language and the actual description in the '533 Patent specification (*see* paragraphs 51-67 below of my Declaration), a POSITA would have no informed or confident choice among the five (5) multiple, possible meanings of claims 7 and 17, and among at least the five (5) multiple, possible meanings of claims 1 and 11 (if not, for claim 11, among possible meanings 1-5 and 7, of claim 11).

45. Specifically, based on my review and in my opinion, a POSITA reading the specification would be informed that meanings 1 or 5 above would appear to be the correct choice because the specification-described embodiments all involve PDKs only communicating with servers via RDCs. *See* paragraphs 51-67 below of my Declaration. However, it is also my opinion that the plain language of claims 1, 7, 11 and 17 of the '533 Patent is broad enough to read onto any one of meanings 2-4 above. I note that Proxense argues that the claims *must* be interpreted to be broad enough to encompass at least one of meanings 2-4 above. *See, e.g.*, Proxense's Opening Brief at pp. 10-12, 15-16. In my opinion, and particularly given this disparity between the disclosure in the specification (*see* paragraphs 51-67 below) and the language of the claims (*see* paragraphs 26-34 and 39-43 above), a POSITA would have no informed or confident choice among these multiple, possible meanings.

6. *The Actual Disclosure in the '533 Patent Specification*

46. In his declaration, Mr. Humphrey offers this high-level description of the '533 Patent:

The '533 Patent relates to solving problems that arise in implementing systems for tracking and providing services for wireless telecommunications devices as they move throughout spaces. Many different wireless telecommunications devices

within the same space, each attempting communication at the same time, presents problems of interference and crosstalk, as well as difficulty in sorting out which device is communicating at any given time. Additionally, constant scanning for devices in the system presents problems of excessive power consumption and thus, for battery-powered devices, reduced battery life.

To overcome these problems, the '533 Patent uses one or more reader decoder circuits ("RDCs") placed throughout a space to interact with one or more personal digital keys ("**PDKs**"), *e.g., mobile wireless telecommunications devices such as smartphones*, and a server to provide information and/or services. *RDCs can communicate with PDKs to track their location as they move through the space, provide services to the PDKs such as via a back-end server, or **direct PDKs to access those services themselves.***

Humphrey Declaration at ¶¶13-14 (emphasis added).

- a. A POSITA Would Understand that the Specification Discloses a PDK Could be Integrated Into a Cellular Phone But Not that a PDK Could be the Cellular Phone Itself

47. As a threshold point, Proxense, and similarly Mr. Humphrey (including in the excerpt above), takes the affirmative position that the '533 Patent specification discloses that a PDK "*may be* any wireless device that may be worn or carried by a user, including *a cellular phone.*" Opening Claim Construction Brief at p. 5 (emphasis added) (*citing* 6:28-47, 9:24-31), p. 11 ("[T]he specification describes a *sophisticated PDK* in an environment that allows the PDK to communicate directly with the claimed server."), p. 12 ("Exhibit 1 at Col. 6:40-47 (PDK may be, *e.g., a cell phone*"), p. 16 ("the '533 Patent explicitly discloses that a PDK could be a cell phone") (*citing* 6:43-47, 9:14-32); Humphrey Declaration at ¶14 ("('PDKs'), *e.g., mobile wireless telecommunications devices such as smartphones*"), ¶26 ("cellular telephone, such as a PDK").

48. Based upon my review of the specification, I disagree that the specification describes that a PDK *itself* could be a cellular phone. Rather, in relation to a cellular phone (and other "mobile computing device[s]"), the specification (including the portions cited by Proxense) clearly states that Proxense's PDK "may actually be *integrated with or implemented in another device, such as a watch or mobile computing device (e.g., cellular phone, personal digital assistant*

(PDA)).” *See, e.g.,* ’533 Patent at 6:28-47, 9:4-6, 9:24-32. Based on my review of the specification, in my opinion, a POSITA reading the disclosure that a PDK “may actually be integrated with or implemented in another device, such as a ... cellular phone” would not understand the specification to disclose that the PDK itself would utilize all of the cell phone’s communication capabilities. For example, and as I discuss in more detail in paragraphs 51-67 below, the specification does **not** disclose PDKs, regardless of their form (whether as a standalone device, integrated into a cellular phone, integrated into a watch, integrated into a PDA, etc. (*e.g.,* ’533 Patent at 6:34-47)), communicating **directly**, *i.e.*, without an intermediary RDC, with a server. And, as I discuss in more detail below (paragraphs 51-55), the ’533 Patent specification (including the portions cited by Proxense), clearly describes RDCs as being far more robust and sophisticated than the “low powered”²⁶ PDKs. *See, e.g.,* ’533 Patent at 6:28-7:18, 9:1-12, Figure 5 (annotated below) and corresponding disclosure at 9:13-10:19, Figure 8 and Figure 9 (annotated below) and corresponding disclosure at 10:20-13:15, 35:56-36:10.

49. Based on (in my opinion) Mr. Humphrey’s inaccurate reading of the specification as describing a PDK **itself** being a cellular phone, he incorrectly posits that, accordingly, a PDK **itself** would also have all of the same communication capabilities as cellular phones known to a POSITA:

As of the filing date of the ’533 patent, cellular telephones had clearly established the capability to communicate wirelessly with servers. At that time, it was also well known that communication between cellular telephones and servers could be, and was often, conducted at least partially through TCP/IP networks, such as the

²⁶ In its opening claim construction brief, Proxense acknowledges the importance of PDKs being “low powered”, in comparison to RDCs, to its invention. *See, e.g.,* Opening Claim Construction Brief at p. 2 (“Proxense initially developed its patented technology for the casino gaming industry ... Proxense’s solution, as described through various embodiments in the ’533 Patent, uses ... a **battery-efficient** personal digital key (‘PDK’) carried by a user of the system ... With lots of inventory and guests moving around a casino, **it would be important that whenever possible the system rely on extremely low power components.**”), p. 4 (“Proxense needed to provide a durable wireless communication device that **did not require, e.g., , a large battery or frequent recharging.**”)

public Internet, which were well known to employ many different network devices such as routers, base stations, and the like. Thus, as of the filing date of the '533 patent, no POSITA would have expected a cellular telephone, such as a PDK, to communicate with a server without adequate network infrastructure, for example using infrastructure such as RDCs to reach a server.

Humphrey Declaration at ¶26; *see also* Proxense's Opening Claim Construction Brief at p. 16 (“[A]t the very minimum, in January 2006 the '533 Patent explicitly discloses that the PDK could be a cell phone communicating over multiple communication protocols in a time when cell phones readily communicated with servers through various network infrastructure.”)

50. As such, Mr. Humphrey's opinion that “a POSITA would read the specification of the '533 patent as encompassing *direct* communication between PDKs and servers” appears to be premised, not on the actual disclosure of the '533 Patent, but rather on cellular phones being known to “have the capability to communicate wirelessly with servers.” As I discuss below in my Declaration (*see* paragraphs 51-67), my review of the portions of the specification cited by Mr. Humphrey and Proxense, as well as the rest of the specification, confirmed my opinion that this is the case.

b. A POSITA Would Understand that the Specification Only Discloses a PDK Directly Communicating with an RDC

51. In the '362 Provisional²⁷, which Proxense incorporated by reference in its entirety into the specification of the '533 Patent, Proxense generally describes how it believes the PDK and RDC components that it developed provide a novel architecture to conduct secure transactions:

This document will provide a functional description of the Proxense TruProx® specifications. It details the TruProx architecture and its components: the Personal Digital Key (PDK®) architecture, Reader Decoder Circuit (RDC) architecture, the communications protocol, and various system configurations ... ***The Proxense***

²⁷ I have been instructed by counsel for Target that priority patent applications (like the '362 Provisional for the '533 Patent), which are incorporated by reference in a patent, are “intrinsic” evidence for claim construction purposes associated with the claims of such patent.

*TruProx system and intellectual property together provide a method of securing transactions between a user carrying a Proxense PDK®, or ‘electronic key’ and a Proxense fixed part, the RDC, which are within a reasonable proximity of each other ... A Proxense system in the most basic form is comprised of a PDK® and an RDC unit. The PDK® ... is a device that can be worn, placed in the pocket of a user, or attached to equipment, has a bidirectional wireless communications transceiver, and contains both public and secret electronic ID numbers as well as cryptographic keys. The RDC is a device providing a fixed access point for a mobile PDK ... to communicate with. The RDC is effectively a gatekeeper for a [PDK] that wants to access the system. **The RDC may be incorporated into** a casino floor, electronic game, doorway, pedestrian traffic monitoring point, or into a personal computer application, an ecommerce device such as ATM machines, or **any other application where secure transactions must take place.***

'362 Provisional at pp. 11-12 (emphasis added); *see also* '533 Patent at 6:28-7:19.

52. The '533 Patent specification generally describes the interactions between Proxense's PDKs (which I annotate in red in the patent figures throughout my Declaration) and Proxense's RDCs (which I annotate in dark green in the patent figures throughout my Declaration) in "Proxense's TruProx system", and how such PDK↔RDC interactions conduct secure transactions, including those with a "central server" (which I annotate in blue in the patent figures throughout my Declaration), as follows and with reference to Figure 1 (which I annotate and reproduce to the right below):

When an individual carrying the PDK 14 comes into proximity of the RDC 12 by entering a coverage area of the RDC 12, a wireless communications session is initiated between the PDK 14 and the RDC 12. If the RDC 12 determines that the PDK 14 is authorized to communicate, information between the PDK 14 and the RDC 12 may be securely exchanged. Information securely obtained from the user's PDK 14 may then be used locally or sent through a back-end communications channel to a central server (not shown). When the transaction completes or when the

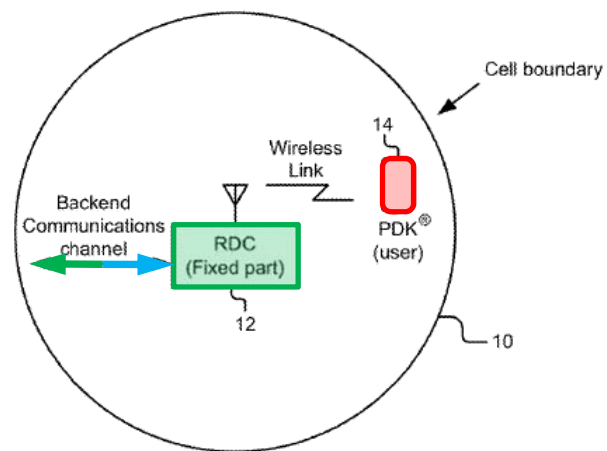


Figure 1

PDK 14 leaves the coverage area of the RDC 12, wireless communication between the RDC 12 and the PDK 14 ceases. Thereafter, the RDC 12 may remain idle (i.e., be in a “tracking” mode) until a PDK again enters the cell 10.

'533 Patent at 7:23-37; '362 Provisional at p. 12.

53. The specification describes PDKs (annotated red, below right) and RDCs (annotated dark green, below left) as each including particular capabilities in order for RDCs to authorize PDKs and then to establish secure wireless links with such PDKs, and that Proxense RDCs would have additional capability including a “service provider interface” to communicate via a “backend communications channel” with servers (annotated blue throughout my Declaration):

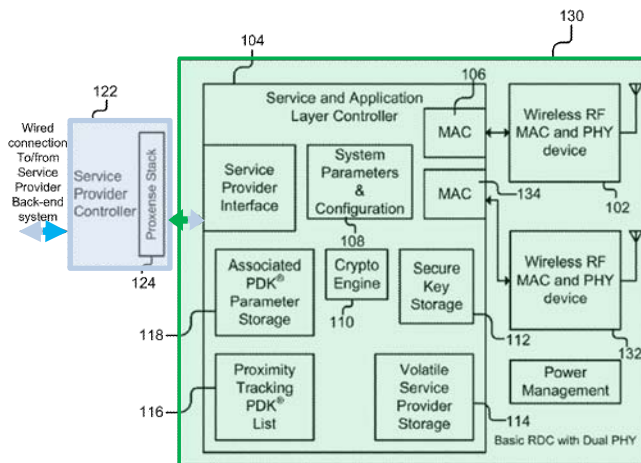


Figure 9

'533 Patent at 9:1-12:44, 35:43-36:10; '362 Provisional at pp. 16-25, 70.

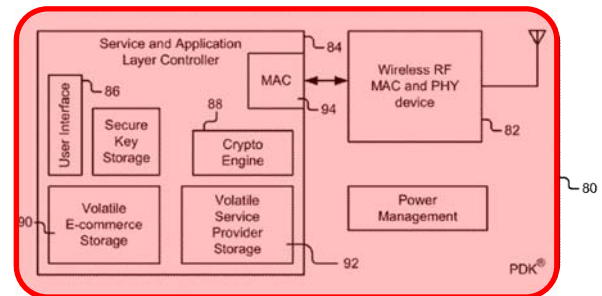


Figure 5

54. The specification also discloses embodiments in which electronic games (annotated light green below) have an “integrated RDC” (annotated dark green below), and discloses that the integrated RDCs, like the standalone RDCs, would have similar capabilities to authorize PDKs and then to establish secure wireless links with such PDKs, and that the electronic games with integrated RDCs, like the standalone RDCs, would similarly include a “service provider interface” to communicate via a “backend communications channel” with servers (annotated blue) throughout my Declaration):

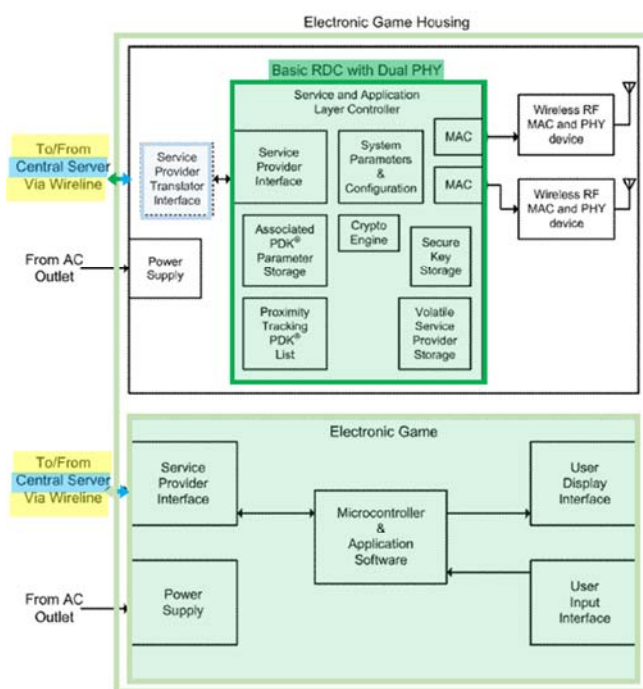


Figure 38

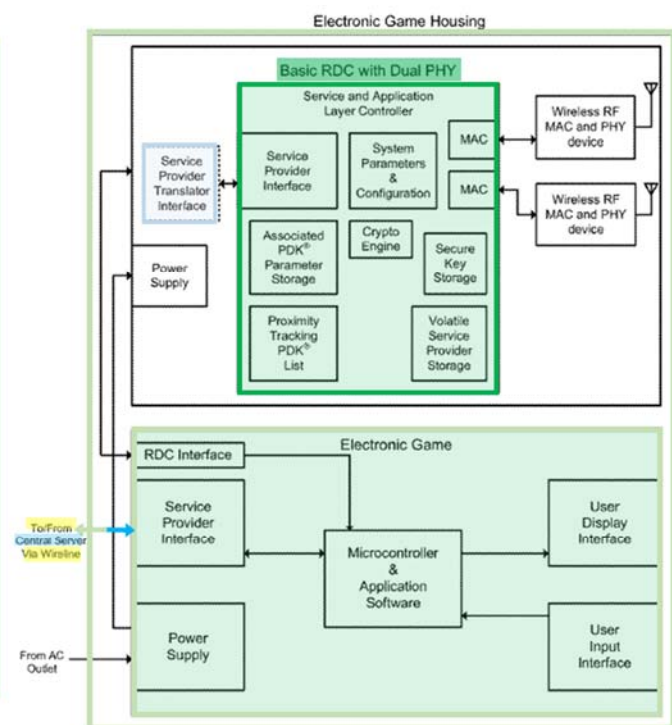


Figure 41

’533 Patent at 25:20-65, 38:48-39:6, 40:6-24; ’362 Provisional at pp. 51, 16-25, 74-76, 79-80.

55. Based on my review, including of the portions specifically cited by Mr. Humphrey and Proxense (*e.g.*, 6:28-7:37, 9:14-10:14, 10:21-38, 15:15-21, 30:29-51, 37:16-57), unlike the disclosure for RDCs (and for electronic games with integrated RDCs), the specification does **not** disclose the PDKs as having a “service provider interface”, **nor** does the specification disclose the PDKs as having **any** capability to interface with (or include) a “service provider controller” (which

I annotate in gray in Figure 9 above), including its “computing controller”, “system stack” and/or “service provider translator interface” (which I annotate in gray in Figures 38 and 41 above)²⁸, *nor* does the specification disclose the PDK as having *any* capability to communicate over a “wired connection” or “via wireline”, *nor* does the specification disclose the PDK as having *any* capability to communicate *directly*, *i.e.*, without an intermediary RDC, with a “server”, “central server” or “service provider back-end system.” *See, e.g.*, Figure 1 (reproduced and annotated in paragraph 52 above) and corresponding disclosure at 6:27-7:37; Figure 5 (reproduced and annotated in paragraph 53 above), and Figures 6 and 7, and corresponding disclosure at 9:1-10, 9:13-19, 35:56-36:10; Figure 8 and Figure 9 (reproduced and annotated in paragraph 53 above) and corresponding disclosure at 9:1-10, 10:23-47, 11:1-4, 11:20-12:4, 12:27-43, 13:8-15, 25:27-35, 35:43-36:10; Figure 15 and Figure 16 (reproduced and annotated in paragraph 57 below) and corresponding disclosure at 14:62-15:35, 18:10-15, 18:46-19:5; Figures 19 and 20 (reproduced and annotated in paragraphs 59, 60 below) and corresponding disclosure at 19:30-63; Figures 23 and 24 (reproduced and annotated in paragraph 60 below) and corresponding disclosure at 22:65-23:7, 23:23-27; Figure 28 and corresponding disclosure at 25:20-38, 28:6-67; Figure 30 and corresponding disclosure at 25:20-38, 28:41-29:8, 29:26-59, 30:16-31:21, 31:64-32:14; Figure 31 (reproduced and annotated in paragraph 63 below) and corresponding disclosure at 32:15-62, 38:48-55; Figures

²⁸ Although the figure is partially obscured on pp. 23-24, the '362 Provisional includes an additional figure (“Figure 9: Service Provider Translator Interface”), and additional disclosure describing how the Proxense RDCs (and Proxense electronic games with integrated RDCs) may communicate (*e.g.*, with servers) via this back-end communication channel. *See also* PROX007824 (which Proxense relied on for a December 2005 priority date in its Infringement Contentions); paragraph 13 above. Proxense incorporated this additional disclosure in the '362 Provisional by reference, but did not reproduce it within the text of the specification of its non-provisional patent applications (including the '533 Patent). *See, e.g.*, '533 Patent at 11:67-12:4; *see also* footnote 27 above. The '362 Provisional states that “by providing the Service Provider Translator Interface” between the RDCs (or electronic games with integrated RDCs) and back-end servers, “the Service Provider is not required to know the details of Proxense technology and timing and therefore reduces development time.” '362 Provisional at p. 24.

33 and 34 (reproduced and annotated in paragraph 63 below) and corresponding disclosure at 33:18-46; Figures 35 and 36 (reproduced and annotated in paragraph 64 below) and corresponding disclosure at 11:56-58, 25:20-65, 33:46-34:35, 34:66-35:2, 35:3-37, 35:43-36:19, 37:16-57; Figure 38 (reproduced and annotated in paragraph 54 above) and Figures 39-40 (reproduced and annotated in paragraph 66 below) and corresponding disclosure at 25:20-38, 38:48-39:6, 39:7-10, 39:15-40:5, Figure 41 (reproduced and annotated in paragraph 54 above) and Figures 42-43 (reproduced and annotated in paragraph 66 below) and corresponding disclosure at 25:20-38, 40:6-41:32.

56. In particular, as Proxense and Mr. Humphrey specifically rely on 10:21-38 of the '533 Patent specification in asserting that “a POSITA would read the specification of the '533 patent as encompassing *direct* communication between PDKs and servers” (Humphrey Declaration at ¶22 (emphasis added), Opening Claim Construction Brief at pp. 11-12, 15-16), I reproduce the entirety of this specification excerpt below, and also reproduce the immediately succeeding text at 10:39-47 (which Proxense and Mr. Humphrey each omit from their citations):

Next, turning to a more detailed description of an RDC 100 according to one or more embodiments, reference is made below to FIGS. 8 and 9. In general, an RDC 100, as described above, may be fixed and used to allow a PDK access into a particular system (e.g., gaming/casino system, financial institution, retail system). The RDC 100 may have different configurations to support different types of secure transactions. Some examples of applications and uses of RDCs include, but are not limited to, casino slot machines and gaming consoles, secure entryway control, user/equipment location tracking, personal computers and components thereof (e.g., disk drives), financial institution interactions, and retail purchasing. In the case of a personal computer, or any computer system for that matter, a reader device, such as an RDC, may be used to control access to certain data stored in the computer system. Thus, in such embodiments, an RDC 100 may be thought of as providing a form of digital content management.

In certain cases, the RDC 100 effectively acts as a gatekeeper allowing authorized individuals access to specific information or transactions. *In other cases, because an RDC 100 may use proximity detection for determining if a PDK is within a particular geographical area, the RDC 100 may also be used for tracking one or more PDKs* within a given area or network. *In still other*

cases, an RDC 100 may be used for both location tracking and secure transaction purposes.

'533 Patent at 10:21-47 (emphasis added); *see also* '362 Provisional at pp. 21-25. Contrary to Mr. Humphrey's statements in his declaration (¶22), and as confirmed by the excerpt at 10:39-47 (omitted by Proxense and Mr. Humphrey) and Figures 5, 9, 38 and 41 (reproduced and annotated in paragraphs 53 and 54 above), 10:21-38 of the '533 Patent specification does **not** disclose that, "after access [to a service offered by, e.g., a server] is granted [by an RDC], servers may provide services to PDKs **directly**." Humphrey Declaration, ¶22 (emphasis added).

57. Rather, and as further confirmed by 11:62-67 and 15:14-35 (of which Proxense and Mr. Humphrey only cite to 15:15-21) (reproduced below), and corresponding Figure 9 (reproduced and annotated in paragraph 53 above) and Figure 16 (reproduced and annotated in this paragraph below), the described "link", and "data exchange" over such link, is **only** disclosed as being between an RDC (annotated dark green) and PDK (annotated red) and, as soon as the PDK moves out of range of the RDC, the "system stack" and "computing controller"—in the "service provider controller" (annotated gray) between the RDC and back-end "server" (annotated blue)—"disable[s]" any "application" being accessed by a user²⁹:

An external service provider controller 122 may be attached to the service provider interface 120 [of the RDC 140] with a system stack 124 residing in the external service provider controller 122. The system stack 124 may allow a third party to easily interface with the RDC 100, possibly requiring function calls to the system stack 124.

'533 Patent at 11:62-67; *see also* '362 Provisional at pp. 23-25.

²⁹ *See also* similar disclosure for Figures 24 (reproduced and annotated in paragraph 60 below), 28, 39 (reproduced and annotated in paragraph 66 below), 42 (reproduced and annotated in paragraph 66 below), and corresponding text at 22:65-23:5, 28:39-50, 39:15-40:5 and 40:33-41:20, of the '533 Patent; '362 Provisional at pp. 46-47 (Figure 25), 56-58 (Figure 29), 76-77 (Figure 40), 80-81 (Figure 43).

The RDC 140 then detects the PDK location response and performs a link request to the PDK 142. The PDK 142 then accepts the request by replying with a link grant, and the two devices 140, 142 are now in data exchange mode. In data exchange mode, the two devices 140, 142 may transfer specific security information that result in *the RDC 140 enabling access to the system through the system stack, computing controller, and/or back-end central server.*

Periodically, data may be exchanged between the RDC 140 and the PDK 142 to ensure that the PDK 142 is still within close proximity of the RDC 140. As long as data exchange continues on a periodic basis, the application may remain enabled and the user can continue to access the application.

After some amount of time, *the user walks away from the RDC 140 causing the data exchange to cease*, in which case, the system stack indicates to the computing controller that the PDK 142 is out of range. The computing controller then disables the application to prevent unauthorized access. Regardless of data exchange, the RDC 140 may continue to transmit periodic beacons to guarantee that other PDKs may gain access to the application.

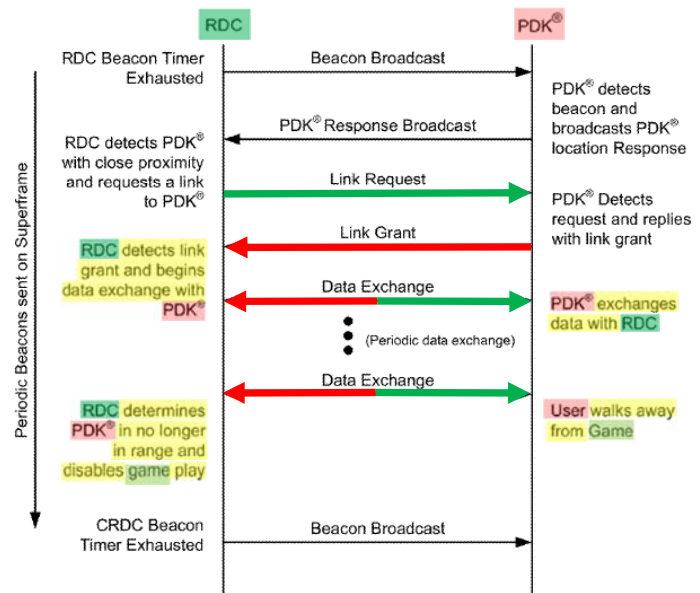


Figure 16

'533 Patent at 15:14-35; *see also* '362 Provisional at pp. 31-32.

58. Thus, as I have shown in paragraph 57 above, to the extent that Mr. Humphrey and/or Proxense are alleging that 15:15-21 of the '533 Patent specification "describes a sophisticated PDK in an environment that allows the PDK to communicate *directly* with the claimed server" (Opening Claim Construction Brief at pp. 11-12), *i.e.*, without an intermediary RDC, that is simply incorrect.

59. Moreover, regarding *how* an RDC (annotated dark green) is “used for tracking one or more PDKs [annotated red] within a given area or network” (10:41-47), the specification explains that “FIG. 19 shows *how* location tracking of a PDK *is possible*” and clearly states “the system 150 has *a server* 164 [annotated in blue below], which is the back-end computer that controls the CRDC 152, *acquires information from the RDCs* 154, 156, and may provide a graphical representation to monitoring personnel via a computer monitor (not shown)”:

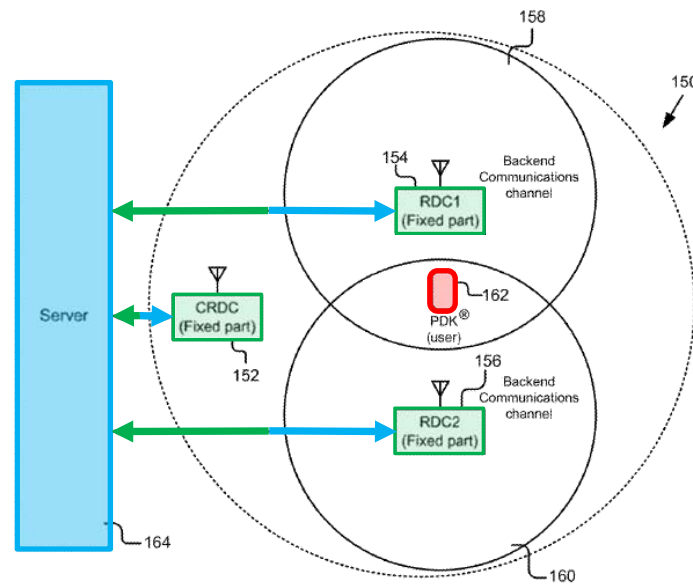


Figure 19

'533 Patent at Figure 19³⁰, 19:30-63; *see also* '362 Provisional at p. 39.

³⁰ The '362 Provisional refers to Figure 19 of the '533 Patent as the “[b]asic location tracking system configuration.” '362 Provisional at pp. 39-40.

60. Figures 20, 23 and 24 (each reproduced and annotated below) describe the “handshake” in order for RDCs (annotated dark green) to be able to track the location of PDKs (annotated red) in these location-tracking embodiments (*see* Figure 19 reproduced and annotated in paragraph 59 above), and in which *the RDCs* log information from the PDKs’ “location response” messages (*e.g.*, “PDK ID, the signal quality metrics, and timestamps”) and send this information to “the server 164 [annotated blue], where the server 164 processes the data *from each RDC* 154, 156 and performs a location estimation that may then be presented to an operator”:

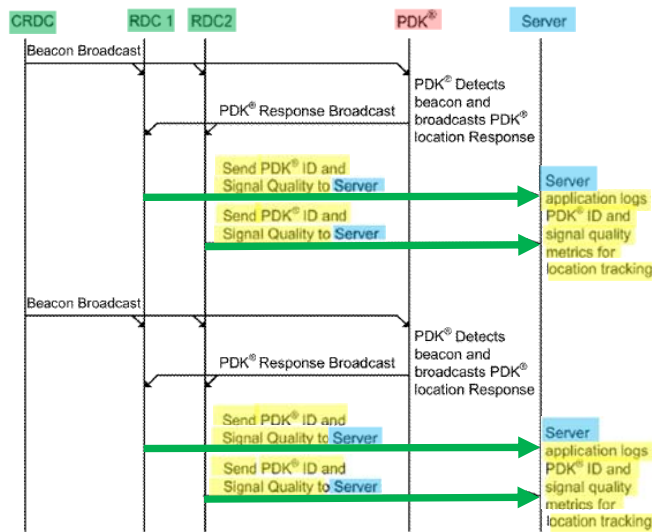


Figure 20

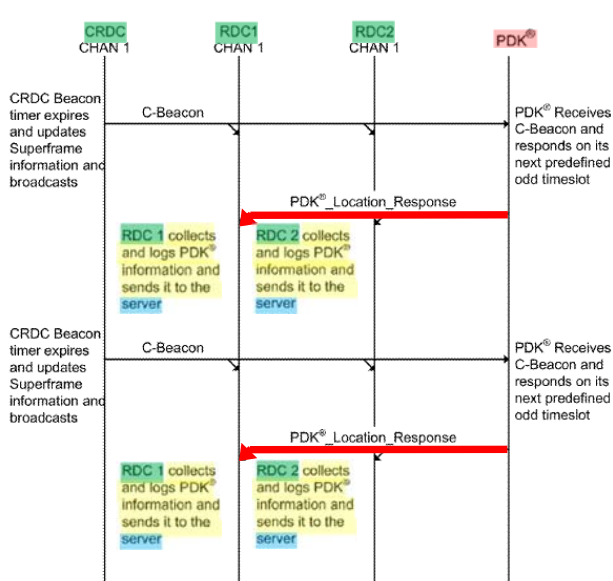


Figure 23

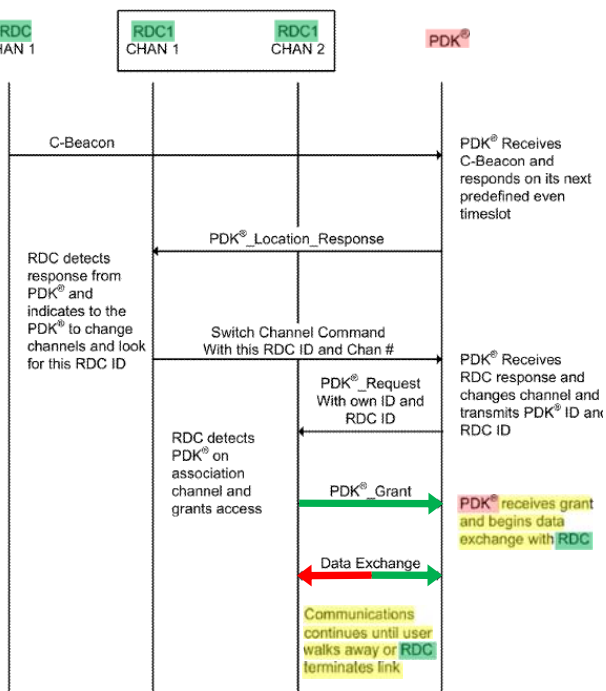


Figure 24

'533 Patent at 19:30-63, 22:65-23:7, 23:23-27; *see also* '362 Provisional at pp. 40, 45-47.

61. As Proxense also appears to contend that the '533 Patent discloses *direct* communications between PDKs and servers at 30:29-51 and 37:16-57 of the specification (*see* Opening Claim Construction Brief at pp. 15-16), I also reproduce these excerpts in their entirety in paragraphs 62 and 64 below. As an initial matter, I note that both of these excerpts are in the portion of the '533 Patent specification describing “electronic game” embodiments. Based on my review, in my opinion, and as I illustrate in paragraphs 62-66 below, in these “electronic game” embodiments, a POSITA would understand that the specification likewise discloses the PDK as *only* communicating directly with RDCs (and specifically with “integrated RDC[s]” of such electronic games (*see* Figures 38 and 41 reproduced and annotated in paragraph 54 above³¹)), and does *not* disclose a “server”, or even the electronic game itself, communicating

³¹ *See also* '533 Patent at 25:20-38, 38:54-39:6, 40:6-24; '362 Provisional at pp. 51,

directly, *i.e.*, without an intervening RDC, with a PDK.

62. Specifically, I have reproduced immediately below the entirety of 30:29-51 of the specification (cited by Proxense at pp. 15-16 of its Opening Claim Construction Brief) as well as the immediately preceding text at 30:16-28 (which Proxense omits from its citation and which clearly establishes that 30:29-51 is referring to a specific technique to “control how a PDK associates with a specific RDC”) and the text at 25:20-37 (which introduces the electronic game embodiments):

The following description is based on, for example, an electronic game (such as one that may be found in a casino) operating in a single cell configuration and attached to some central server. However, it is noted that as described above, examples of applications and uses are for purposes of illustration and clarity and do not limit the present invention. The game has a resident RDC integrated into its hardware and has a system stack that allows access to the game. The RDC may be attached to the game controller, or may use a separate controller containing the system stack and an interface to the central server. For clarity, any interactions between the RDC and the server will assume that the reader understands that the system stack and server interface application are taken into account in the transactions described³². This description covers the basic initialization of the system and RDC/PDK interactions that occur while associated in the system.

’533 Patent at 25:20-37; *see also* Figures 38 and 41 reproduced and annotated in paragraph 54 above); ’362 Provisional at pp. 51, 75-76 (Figure 39), 79-80 (Figure 40);

As to the case where a player may be registered to multiple RDCs, but wants to associate with one RDC at any given time, ***there may one or more techniques that may be employed to control how a PDK associates with a specific RDC***. In one way, a PDK is associated with a single RDC. Using this technique, the PDK may attempt to associate to other RDCs, but the other RDCs will deny association through the back-end central server, causing the PDK to ignore the other RDCs as previously described above. It is noted that such a technique may eliminate a cell size issue, where the cell must be constrained to prevent other RDCs the PDK is registered to from accessing the PDK.

In another technique for directing a PDK to communicate to one RDC in a

³² *See also* paragraph 57 above (reproducing ’533 Patent at 11:62-67 describing the “system stack” and “computing controller”, which are in the “service provider controller” (annotated gray) between the RDC (annotated dark green) and back-end “server” (annotated blue) and citing to corresponding disclosure at pp. 23-25 of the ’362 Provisional).

configuration where multiple RDCs exist of which the PDK is registered to, by significantly reducing the RF power level from the RDC and providing this information along with a request for the PDK to reduce its RF power, a close proximity communications channel may be created. The close proximity communications channel may then operate as if a single cell network exists. More particularly, if the RDC is configured to have a reduced RF power output, the RDC's cell boundary shrinks causing the PDK to have to be within closer proximity of the RDC to receive a beacon from that RDC. If, in turn, the RDC indicates in the beacon that it is at reduced RF power, the PDK is aware that the RDC is in extremely close proximity. In addition, if the beacon includes a command to instruct the PDK to reduce RF power, the chance of surrounding RDCs receiving a response or interference from the PDK may be minimized. When the communications channel is terminated and the PDK no longer sees the beacon from that RDC, the PDK may readjust its RF power level to normal levels for a larger cell coverage area. Such dynamic RF power level adjustment may be implemented in the system stack.

'533 Patent at 30:16-51; *see also* '533 Patent at 35:15-36:10 (reproduced below); *see also* '362 Provisional at pp. 60-62 (under the heading "5.3.3.1.2 Method 2 -Association by extreme close proximity" of "5.3.3.1 Access control"). Based on my review of the specification as a whole, in my opinion, and to the extent Proxense is making such an assertion at pp. 15-16 of its Opening Claim Construction Brief, I disagree that a POSITA would understand that 30:29-51 of the '533 Patent discloses *direct* communications between a PDK and a server, *i.e.*, without an intermediary RDC.

63. Rather, like the prior described embodiments, the '533 Patent describes the interactions between PDKs (annotated in red) and RDCs (annotated dark green) that are "integrated" with "electronic games" (annotated light green), and how such PDK \leftrightarrow RDC interactions conduct secure transactions in a "multi-cell coordinated" casino application, including those with a "central server" (annotated blue) as follows and with reference to Figure 31, 33, 34 and 36 (reproduced and annotated below):

Referring to FIG. 31, a CRDC (not shown) and multiple RDCs (shown, but not individually labeled) are distributed throughout a casino floor. In such embodiments, a single CRDC generates a cell 210 that provides ubiquitous coverage of the entire floor. On the left side of FIG. 31, multiple RDCs (shown, but not labeled) provide overlapping

cell coverage and blanket the casino floor and gaming table area 212 all the way to an entrance of the casino with continuous wireless service coverage. These RDCs may be dedicated to PDK location tracking, allowing the casino operator to know where a player carrying his/her PDK is

geographically located on the floor. These RDCs may be mounted in the floor or ceiling, creating, for example, relatively symmetrical cells. Another set of RDC cells (shown, but not labeled) are shown to exist in the right side of FIG. 31 and are integrated in gaming machines (shown, but not labeled) within an electronic gaming area 214. The cell orientation for these RDCs is more oblong and focused at players that are within close proximity and in front of the electronic gaming machines, noting that cell orientation and shape may be set according to antenna

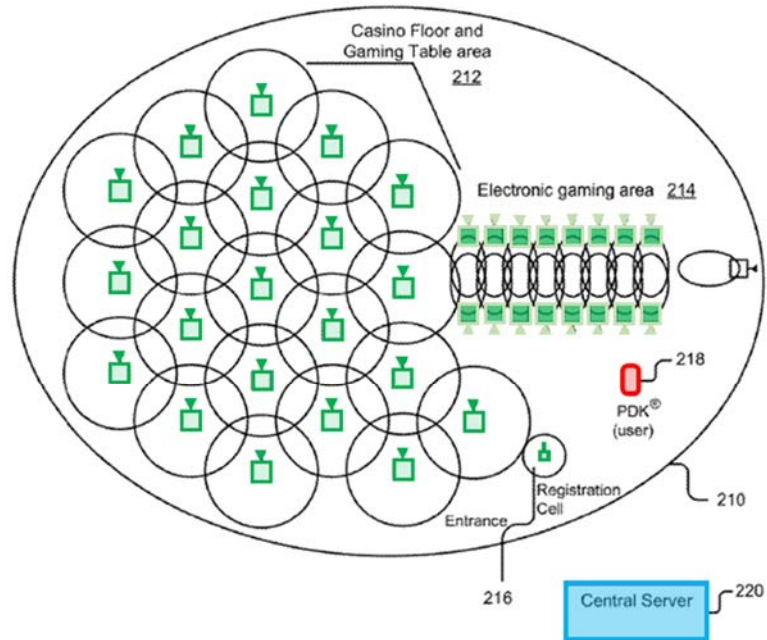


Figure 31

position and/or configuration. The cells extend outward towards the center of the isle to detect the presence of a player that may be walking by. Toward the lower right part of FIG. 31 is a registration cell 216 that sits at a registration desk (shown, but not labeled) where a player may register and acquire a PDK the first time the player enters the casino. The registration cell 216 may be smaller in size to enable local communications between the RDC and PDK without allowing external RF monitoring devices to capture and record the interaction between the devices. It is noted that in FIG. 31, a PDK 218 that is currently out of the range of all RDCs, but still in range of the CRDC. This represents a PDK carried by a player, which is being used to track the player's position and provide additional services. Such services are further described below. Further, still referring to FIG. 31, there is a central server 220. ***The central server 220 may contain a player's financial information (credit card numbers, gambling limits, and other information related to a player). In addition, the central server 220 may be physically wired (not shown) to all RDCs and/or CRDCs located throughout the casino.***

'533 Patent at 32:15-59 (emphasis added); '362 Provisional at pp. 63-64 (under heading "5.3.4

Multi-Cell coordinated Operation (Casino Application)");

The CRDC, PDK location tracking RDCs, and gambling table RDCs, may interoperate in a system such as that shown in FIG. 33. FIG. 33 shows a graphical representation of the sequence of events that may occur when a c-beacon is transmitted in, for example, a casino application.

As shown in FIG. 33, first, a CRDC 250 transmits the c-beacon to all RDCs and PDKs (shown, but not labeled) within the CRDC's cell radius. All of the RDCs and PDKs setup and synchronize their timing to the beacon. Next, each PDK, in its appropriate timeslot, transmits a PDK location response ID. Any RDC that is in the vicinity of the PDK's response receives the PDK location response ID and logs specific information related to the reception. **Then, each RDC packetizes the information received from the PDK and, through a wired back channel, relays the information to a central server 252.** The central server 252 may then utilize this information to indicate to an operator, by either graphical or text format, the geographic location of each player.

Representing the flow in a different manner, the interactions for a single PDK is shown in FIG. 34. In addition to providing location tracking information, when the PDK outputs a PDK location response ID, certain events may occur from an RDC based device. In the event the RDC based device is an electronic game, via the central server, the electronic game may entice the player over to it by flashing information on the screen related to that specific player. In one example, an electronic gaming machine may offer the player a free game, gaining

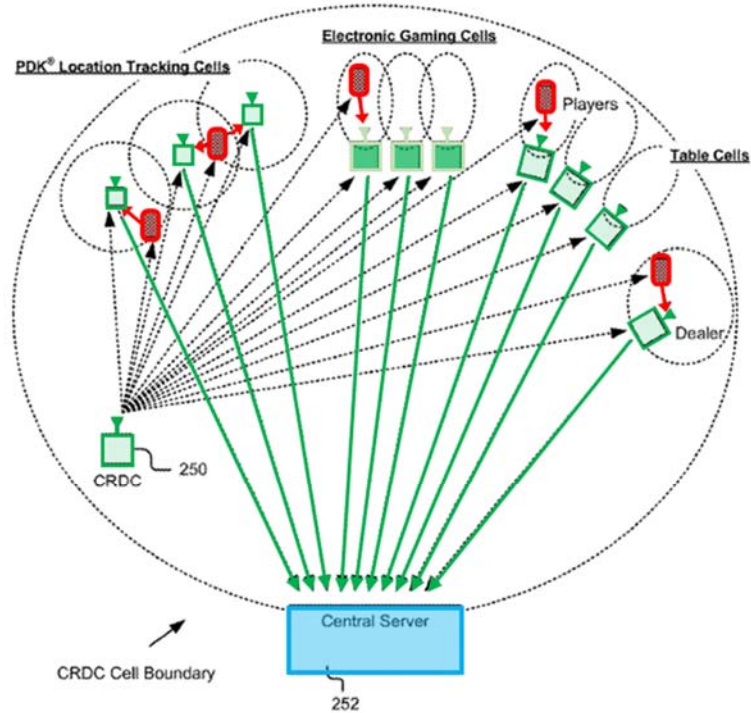


Figure 33

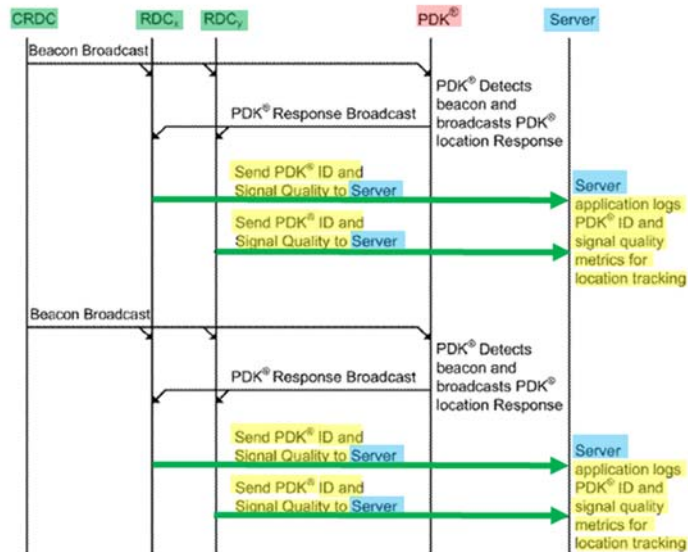


Figure 34

the player's attention and ultimately enticing the player to play the game.

'533 Patent at 33:18-48 (emphasis added); '362 Provisional at pp. 65-66 (Figures 34-35 and again under heading "5.3.4 Multi-Cell coordinated Operation (Casino Application)");

64. Similarly, 37:16-57 of the '533 Patent (relied on by Proxense at p. 16 of Opening Claim Construction Brief) is described in the context of Figure 36 (reproduced and annotated below). I have reproduced the entirety of 37:16-57 of the specification (cited by Proxense at pp. 15-16 of its Opening Claim Construction Brief), as well as the preceding text at 33:49-52 (previewing the RDC's "interrogation" of the PDK (on behalf of the central server) and the RDC's set up (on behalf of the central server) of the respective Server \leftrightarrow RDC and RDC \leftrightarrow PDK data exchanges illustrated in Figure 36), and the preceding text at 35:56-36:10 and 11:55-58 (describing how the RDC registers the PDK and how the RDC "installs and configures" onto the PDK "service provider information located on the central server"):

In the event *the RDC device* is used for location tracking, it *may perform further*

interrogation of the PDK to determine whether the PDK is legitimate. A more detailed description of such interrogation is provided below ... When the PDK responds with a PDK location tracking response, *every RDC within local proximity* that can receive the response may log the response message in its database along with signal quality metrics and a timestamp. They *will then send the information back to the central server*. The response may be sent by the server polling the RDC or by the RDC if it has data to send. Once the central server receives the PDK information *from one or multiple RDCs*, the server may then determine if any further communication with the PDK is necessary. If, for example, the system wants to validate the PDK, it

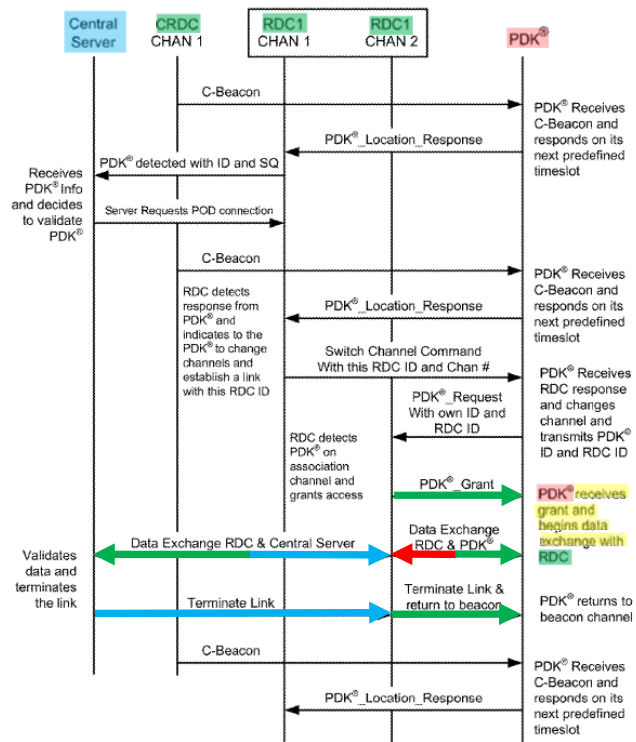


Figure 36

can perform a validation. ***The server may then send a command to a specific RDC*** to set up communications with a specific PDK ***and wait for a response from that RDC.*** Because the communication between the RDC and the central server may not be instantaneous, the RDC may have to wait for the next PDK location tracking response. After performing CSMA-CA, it may immediately instruct the PDK to switch to the alternate channel. If, during the CSMA-CA, the RDC detected another device on the channel, the RDC may wait for the next PDK location tracking response from that PDK and then re-attempt PDK channel reassignment. The PDK may then switch to the alternate channel, perform CSMA-CA, and send a link request to that specific RDC ID with its own ID included. ***The RDC***, looking for the link request with its specific ID and a particular PDK ID, ***detects the request and then responds with a link grant.*** Further, ***the RDC may alert the central server of the link***, and a data exchange occurs with information the server is interested in collecting by interrogating that PDK. After the data exchange occurs, ***the central server commands the RDC to terminate the link. The RDC may then terminate the link***, and the PDK may return to the c-Beacon channel, re-synchronizing to the beacon, and begin monitoring for its timeslot. The PDK may then continue to send responses back to all RDCs in its immediate vicinity when its specific superframe count and timeslot are valid. It is noted that the foregoing description detailing a process of PDK validation and interrogation relates to one or more embodiments. However, in one or more other embodiments, ***the central server may have also altered the service provider information within the PDK.*** If, during the switch to the alternate channel for RDC to PDK communications, the PDK determines the channel is occupied or the PDK does not receive a link grant back from the RDC, the PDK may perform one or more additional attempts. If after all attempts, the PDK does not receive a response from an RDC, that PDK may return to the c-beacon channel, realign to the beacon, and then begin sending its PDK location tracking ID. If the RDC was unable to receive the link request from the PDK on the alternate channel, for a predefined period of time, the RDC may flag the error and continue listening on the channel. ***If the same RDC is again instructed to establish communications with the same PDK, the RDC may choose to use a different alternate channel and redirect the PDK to the new alternate channel for communications.***

'533 Patent at 33:49-52, 37:16-38:5 (emphasis added); *see also* '362 Provisional at pp. 70-73

(Figure 37) (under heading "5.3.4.3 POD registration and operation");

In one or more embodiments, a registration RDC may be used to initially enable and to configure a PDK. The registration RDC may have a small cell coverage area by design, measured, for example, in inches. This may require that the unregistered PDK must be in extremely close proximity, e.g., placed on the registration RDC housing, to communicate with the registration RDC, reducing the likelihood of RF eavesdroppers gaining access to PDK setup information. ***The registration RDC may be directly connected to a central server.*** In addition to specific security features, ***the registration RDC installs and configures service provider information located on the central server (described above with reference to FIGS. 6 and 7).*** Such information may include the service provider ID, secret key, and other parameters that the service provider wants to designate for access within their network. These other parameters may vary in size in the PDK and may be

defined by the host system to meet the needs of the property. *Information transferred to a PDK may include, for example, the service provider site ID, the service provider's assigned PDK ID, the service provider's secret service ID, the service provider's secret key, and service provider specific access information.*

'533 Patent at 35:56-36:10 (emphasis added); *see also* '362 Provisional at pp. 66 (under heading "5.3.4.2 Registration RDC configuration")

Still referring to FIG. 8 ... A service provider interface 120 [of RDC 100] may allow both control and query of the RDC 100. The service provider interface 120 may further provide the transport for keys from a PDK (not shown) ... Now referring to FIG. 9 ... components having like reference numbers as those reference numbers in FIG. 8 function identically or similarly to the corresponding components in FIG. 8.

'533 Patent at 11:55-58, Figure 9 (reproduced and annotated in paragraph 53 above); *see also* '362 Provisional at pp. 22-25 (Figure 10).

65. As confirmed by reading 37:16-57 in the context of Figure 36 (to which it refers) and the specification as a whole, and consistent with the embodiments described in Figure 16 (reproduced and annotated in paragraph 57 above), Figures 23 and 24 (reproduced and annotated in paragraph 60 above), Figure 28, and Figures 39, 40, 42 and 43 (reproduced and annotated in paragraph 66 below), in my opinion, based on my review, and to the extent Proxense is making such an assertion at pp. 15-16 of its Opening Claim Construction Brief, I disagree that a POSITA would understand that 37:16-57 of the '533 Patent discloses *direct* communications between a PDK and a server, *i.e.*, without an intermediary RDC. Rather, based on my review, 37:16-57 of the specification *only* discloses the PDK (annotated red) as having a "link", and "data exchange" over such link, with an RDC, and does *not* disclose *direct* communications, or data exchanges, between a PDK and a server (annotated blue).

66. As further support for my opinion, I reproduce and annotate Figures 39, 40, 42 and 43, and the corresponding text from the '533 Patent below:

[R]eferring to FIG. 39, it shows an example of a handshake that may take place from the time a player carrying a PDK is detected to the time the game is enabled for that player. For purposes of clarity, the CRDC is not shown in FIG. 39. The handshake starts by the PDK detecting a c-beacon. Each time the c-beacon is detected on the expected superframe and timeslot, the PDK may send out a PDK location tracking response. **The**

RDC near the game detects the response and sends the PDK's information back to the central server. The server realizes the user is close to the game and may send a command back to the game instructing it to display a message for the player in an effort to entice the player to play. In this example, the player may see the message and sit down at the game and press a button to commence play. In turn, **the game sends a message back to the server** indicating that the button has been pressed. **The server then requests the RDC to make a connection with the player's PDK.** Upon the next c-beacon, **the player's PDK responds and the RDC receives the response. The RDC then transmits back to the PDK to change to another channel for association mode to begin.** It is noted that up until this time, the PDK was in tracking mode.

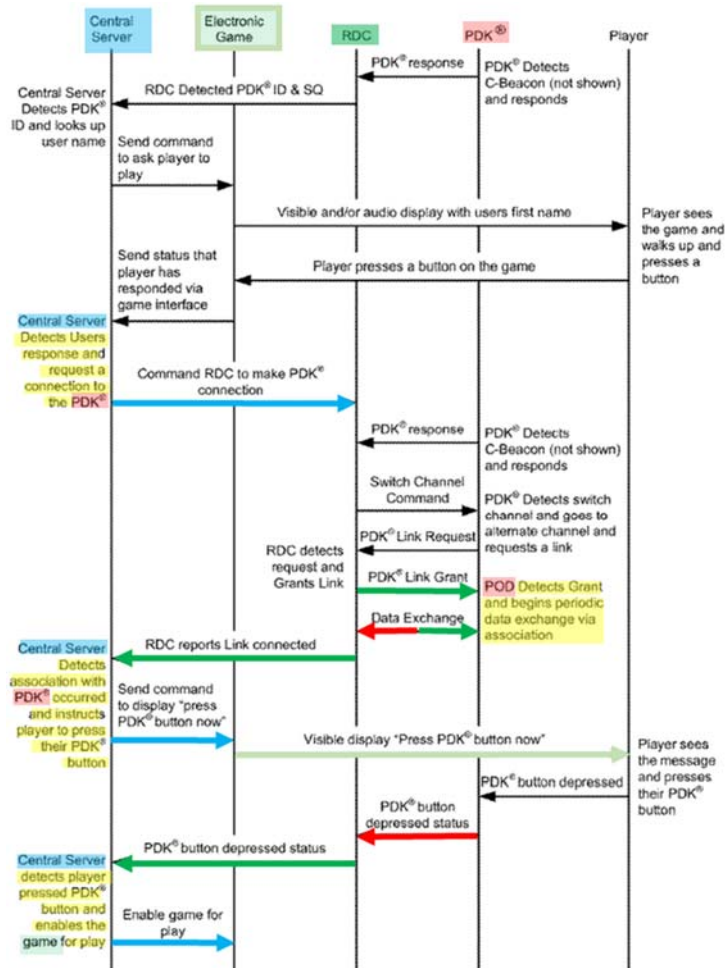


Figure 39

The PDK then switches to the alternate channel indicated by the RDC and sends out a PDK link request with both the PDK ID and the RDC ID. **The RDC detects the request and sends back a PDK link grant. The PDK and the RDC then exchange secure information to establish trust, prior to establishing a secure link for validation of the PDK.** The RDC may also lower its RF power and instruct the PDK to lower its RF power in order to enforce close proximity. **Periodic data exchange may continue to between the RDC and PDK. After the secure link is established, the RDC may report back to the central server that the link is established between the RDC and PDK. The central server may then send a command to the game** to display a message, which the game then displays. The player may see the message on the screen and presses his PDK's button causing it to transmit this event over the secure link to the RDC. **The RDC relays**

this information back to the server. When the central Server receives the button press message, it can enable the game so that the player may begin playing.

'533 Patent at 39:7-48 (emphasis added); *see also* '362 Provisional at pp. 76-77 (Figure 40)

(under the heading "5.3.4.4.1 Integrated RDC with no internal game interconnect").

The handshake continues as shown in FIG. 40. After the game has been enabled for the player to play, *the server may then send a command to the RDC to start polling the player's PDK. The RDC then*

periodically polls the PDK and may have returned the responses of each poll back to the server, as shown in FIG. 40. Still referring to the example being described with reference to FIGS. 39 and 40, the player may continue to play the game for a while, then finishes and decides to leave. *When the player exits the coverage area of the RDC near the game, the communications link is broken.*

The RDC attempts to poll the PDK, but receives no response. The RDC continues a few more times with no response. *The RDC then reports back to the central server that the link was lost and the PDK is out of range.* The central server then sends a message to the game to return it to an idle state so that another player can play, then requests the game to send back the player's game play information (if not already obtained), which the server logs.

As described above with reference to FIGS. 39 and 40, a central server may be the communications medium linking an RDC to a game. It communicates with the game, tying the PDK to that game. If either device loses connection to the central server, game play may stay enabled.

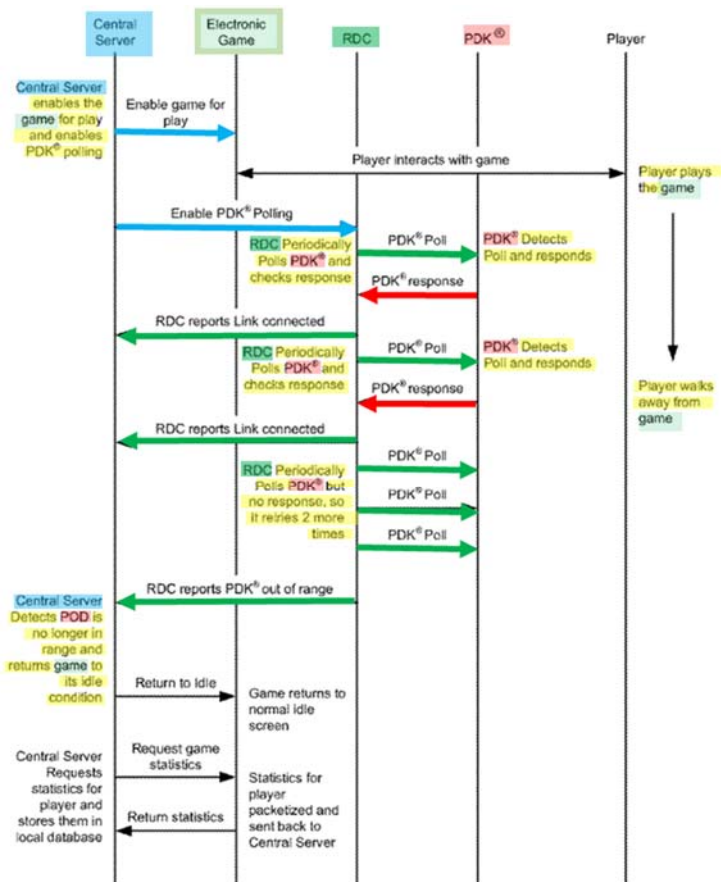


Figure 40

'533 Patent at 39:49-40:5 (emphasis added); *see also* '362 Provisional at pp. 77-78 (Figure 41)

(under the heading "5.3.4.4.1 Integrated RDC with no internal game interconnect").

At least one difference in the configuration shown in FIG. 41 [reproduced and annotated in paragraph 54 above] relative to the configuration shown in FIG. 38 [reproduced and

annotated in paragraph 54 above] is that the game's internal controller may act to reduce the traffic loading on the back-end network and perform more local verification of the communications link between the PDK and the RDC. To illustrate a difference in interaction between these two configurations, reference is made to the handshake diagram shown in FIG. 42. More particularly, FIG. 42 shows a handshake that may take place from the time a player carrying a PDK is detected to the time the game is enabled for that player. For purposes of clarity, the CRDC is not shown in FIG. 42. The handshake starts by the PDK detecting a c-beacon. Each time the c-beacon is detected on the expected superframe and timeslot, the PDK sends out a PDK location tracking response. **The RDC within the game detects the response and sends the PDK information back to a central server via the game's internal controller.** The server is made aware that the user is close to the game and **sends a command back to the game controller** instructing the game to, for example, give the user a free game along with optionally displaying the user's name.

The game then displays a message for the player in an effort to entice the player to play. The player may then see the message, sit down at the game, and press a button to commence game play. In turn, the game controller detects the button press and requests the RDC to make a connection with the player's PDK. Upon the next c-beacon, the PDK responds and the RDC receives the response. The RDC may then transmit back to the PDK a command to change to an alternate channel for association. The player's PDK then switches to the alternate channel indicated by the RDC and sends out a PDK link request with both the PDK ID and the RDC ID. **The RDC detects the request and sends back a PDK link grant. The PDK and the RDC may then exchange secure information to establish trust, prior to establishing a secure link for validation of the PDK.** The RDC

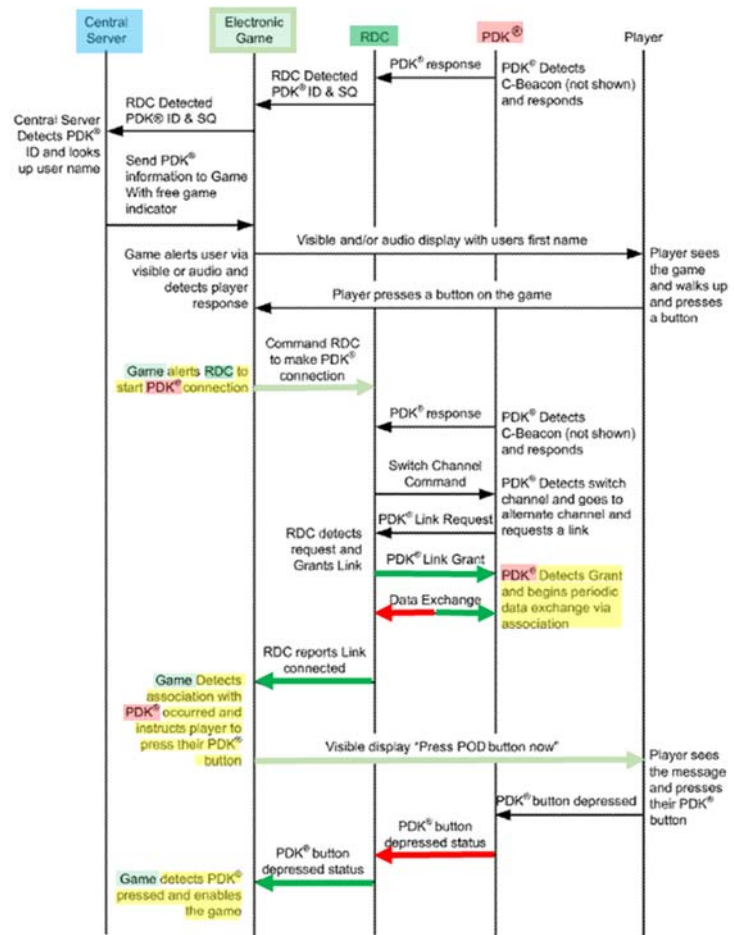


Figure 42

may also lower its RF power and instruct the PDK to lower its RF power in order to enforce close proximity. **Periodic data exchange may then continue between the RDC and PDK. After the secure link is established, the RDC reports back to the game controller that the link is established between the RDC and PDK.** The game may then display an instructional message for game play. The player may see the message on the

screen and presses the player's PDK button, *causing the PDK to transmit this event over the secure link to the RDC. The RDC may then send this information back to the game controller.* When the game controller receives the button press message, it can enable the game so that the player can begin playing.

'533 Patent at 40:18-67 (emphasis added); *see also* '362 Provisional at pp. 79-81 (Figure 43) (under the heading "5.3.4.4.1 Integrated RDC with internal game interconnect").

The handshake continues as shown in FIG. 43. After the game was enabled for the player to play, *the game controller sends a command to the RDC to start polling the player's PDK. The RDC then periodically polled his PDK* and had the option of returning the responses of each poll back to the controller, as shown in FIG. 43. Returning to the example described above with reference to FIGS. 42 and 43, the player may continue to play the game for a while, then finishes and decides to leave. *When the player exits the coverage area of the RDC near the game, the communications link is broken.* The RDC attempts to poll the PDK, but receives no response. The RDC may continue a few more times, with no response. *The RDC then reports back to the game controller that the link was lost and the PDK is out of range.* The game controller returns itself to an idle state so that another player can play and *indicates back to the central server that the PDK is out of range.* The

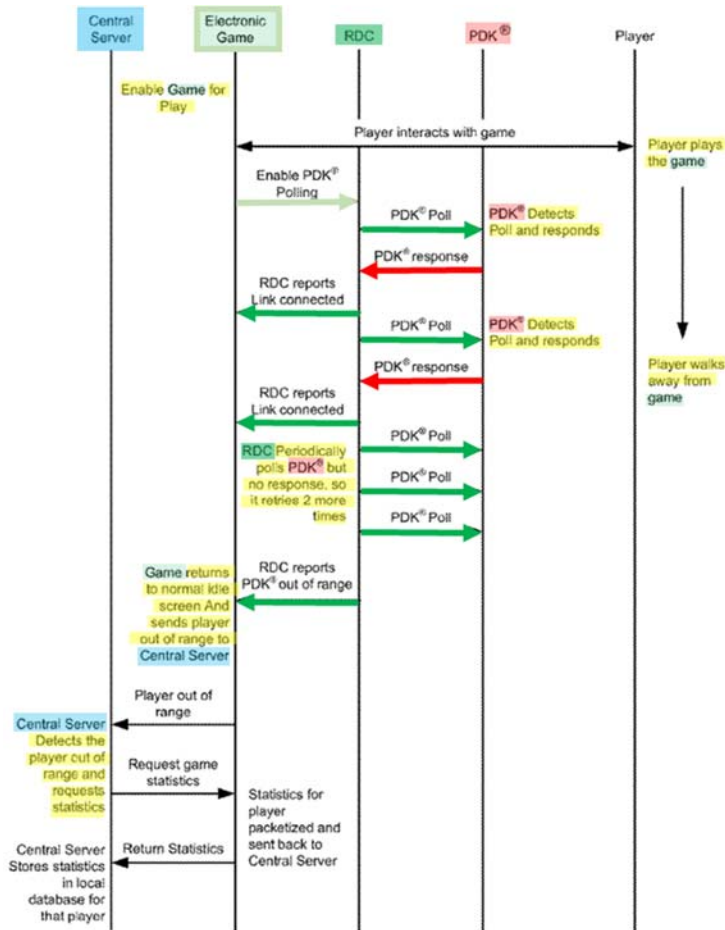


Figure 43

server may then request the game to send the player's game play information (if not already received), which is then logged. As described above with reference to FIGS. 42 and 43, in one or more embodiments, the game controller may become more involved in the RDC to PDK association, thereby potentially reducing the back-end system network's traffic loading relative to that experienced with the configuration where an RDC is electrically separate from the game controller. The game controller may also react faster to the user walking out of range and may not require any response from the server in

order to maintain the link. It is further noted that a broken link between the central server, game controller, and RDC may not result in any loss of any interaction between the RDC and the game controller.

'533 Patent at 41:1-32 (emphasis added); *see also* '362 Provisional at pp. 81-82 (Figure 44) (under the heading "5.3.4.4.1 Integrated RDC with internal game interconnect").

67. Based on my review of the specification as a whole (including those portions of the specification cited by Mr. Humphrey and Proxense), I disagree with Mr. Humphrey's statement that "a POSITA would read the specification of the '533 patent as encompassing **direct** communication between PDKs and servers." Rather, in my opinion, a POSITA would **not** understand the specification to disclose a "server" communicating **directly** with a PDK, *i.e.*, without an intermediary RDC.


7. *Summary of My Opinions as to the Specific Questions of Fact on Which I Have Been Asked to Opine*

68. As I discuss in my Declaration above, given the language of the claims (*see* paragraphs 22, 26-34 above), and the clear, undisputed disclosure in the specification of the '533 Patent that RDCs forward communications from PDKs to servers (and to PDKs from servers), it is my opinion that the claim phrases-at-issue (*see* paragraphs 22, 26 above) would have multiple possible meanings to a POSITA (*see* paragraphs 39-43 above).

69. As I discuss in my Declaration above, particularly given the disparity between the language of the claims (*see* paragraphs 22, 26-34, 39-43 above) and the actual disclosure in the specification of the '533 Patent (*see* paragraphs 35-38, 51-67 above)—which a POSITA would **not** understand to disclose a "server" communicating **directly** with the claimed "second wireless device" (PDK), *i.e.*, without an intermediary "first wireless device" (RDC) (*see* paragraphs 51-67 above)—it is my opinion that a POSITA would have no informed or confident choice among these contending meanings (*see* paragraphs 44-45 above) for the claim phrases-at-issue.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Executed this 14th day of June in 2021.



Dr. Benjamin Goldberg